STOCK

PRÄZISION

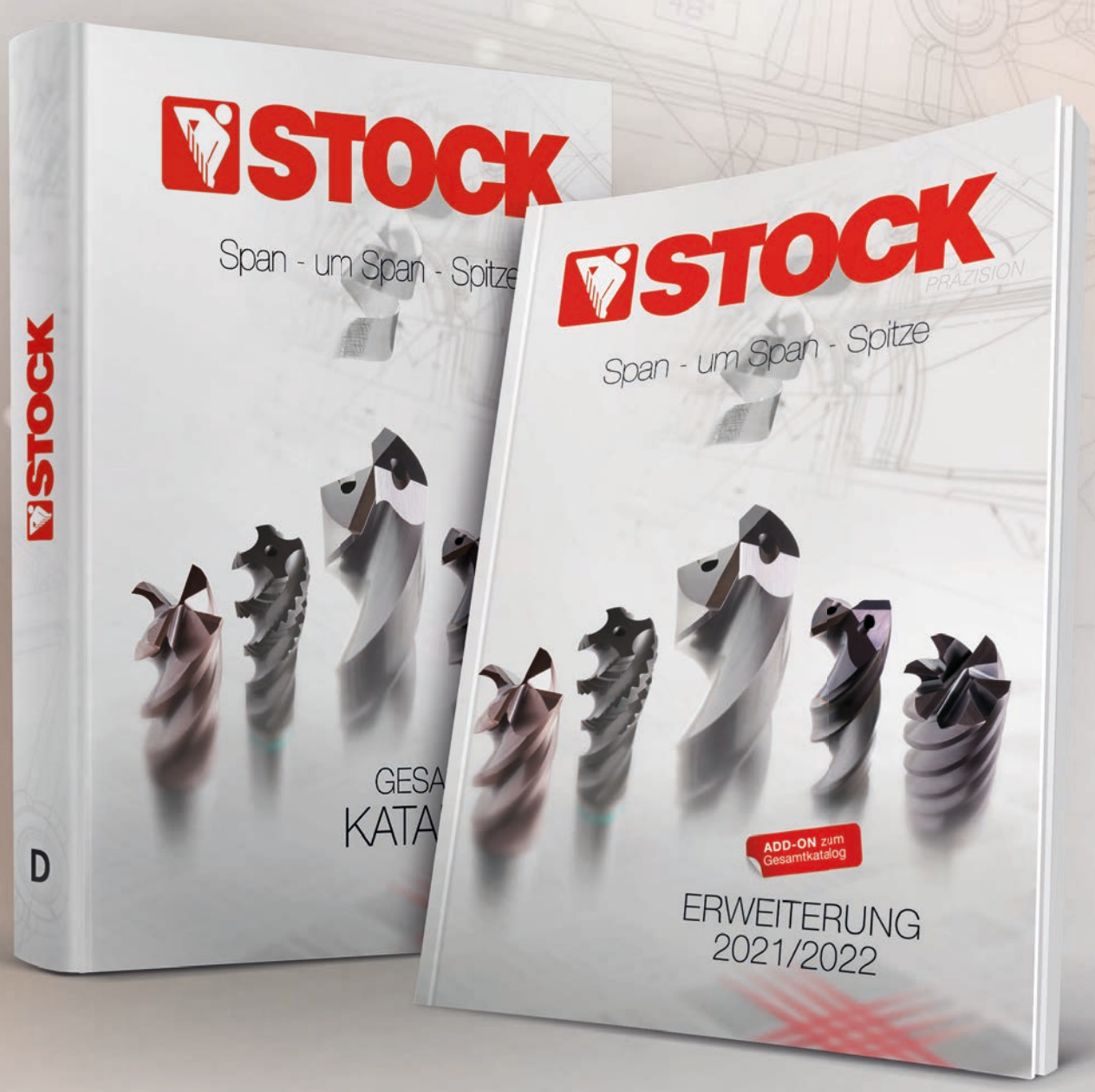
Span - um Span - Spitze

ADD-ON zum Gesamtkatalog

ERWEITERUNG 2021/2022

ERWEITERUNG 2021/2022
DER KATALOG ZUM KATALOG!

Ihr Werkzeug-Update ist da: Der Gesamtkatalog 2016 dient unseren Kunden weiterhin als verlässliche Grundlage für die Werkzeugbeschaffung. Als Ergänzung informieren unsere Erweiterungskataloge Sie regelmäßig über neue Produkte in unserem Programm. So erhalten Sie auch mit der Ausgabe 2021/2022 das vollständige Add-on zum Gesamtkatalog mit allen Neuheiten auf über 220 Seiten. Seien Sie gespannt!



P	M	K	N	S	H	Typ	Schaft-form	Bohrtiefe	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite

SuperV-Bohrer ohne Innenkühlung

●		●	○	○	○	SuperV-U	HB	3xD	**VHM**	TiAlN nano	DIN 6537K	3,000 - 20,000	**51673**	16

●				○	○	SuperV-S	HA	3xD	**VHM**	TiAlSiN	DIN 6537K	3,000 - 20,000	**51750**	18

●		●	○	○	○	SuperV-U	HB	5xD	**VHM**	TiAlN nano	DIN 6537L	3,000 - 20,000	**51687**	20

SuperV-Bohrer mit Innenkühlung

●	○	●	○	○	○	SuperV-IK-U	HB	3xD	**VHM**	TiAlN nano	DIN 6537K	3,000 - 20,000	**51676**	22

	●			○		SuperV-VA	HB	3xD	**VHM**	AlTiN nano	DIN 6537K	3,000 - 20,000	**51670**	24

●				●	○	SuperV-S	HA	3xD	**VHM**	TiAlSiN	DIN 6537K	3,000 - 20,000	**51752**	26

●				●	○	SuperV-S	HE	3xD	**VHM**	TiAlSiN	DIN 6537K	3,000 - 20,000	**51753**	28

			●			SuperV-Al	HA	5xD	**VHM**	blank	DIN 6537L	3,000 - 20,000	**71791**	30

●	○	●	○	○	○	SuperV-IK-U	HB	5xD	**VHM**	TiAlN nano	DIN 6537L	3,000 - 20,000	**51681**	32

	●			○		SuperV-VA	HB	5xD	**VHM**	AlTiN nano	DIN 6537L	3,000 - 20,000	**51674**	34

●	○	○		○	○	SuperV-X	HA	5xD	**VHM**	TiAlN nano	DIN 6537L	3,000 - 20,000	**51786**	36

●				●	○	SuperV-S	HA	5xD	**VHM**	TiAlSiN	DIN 6537L	3,000 - 20,000	**51754**	38

●				●	○	SuperV-S	HE	5xD	**VHM**	TiAlSiN	DIN 6537L	3,000 - 20,000	**51755**	40

●	○	○		○	○	SuperV-X	HA	7xD	**VHM**	TiAlN nano	Werksnorm	3,000 - 20,000	**51791**	42

●				●	○	SuperV-S	HA	7xD	**VHM**	TiAlSiN	Werksnorm	3,000 - 16,000	**51756**	44

P	M	K	N	S	H	Typ	Schaft-form	Bohrtiefe	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite
SuperV-Bohrer mit Innenkühlung														
														
●	●	●	○	○		SuperV-T	HA	15xD	**VHM**	AlTiN	Werksnorm	3,000 - 16,000	**51764**	45
														
●	●	●	○	○		SuperV-T	HA	20xD	**VHM**	AlTiN	Werksnorm	3,000 - 16,000	**51765**	46
														
●	●	●	○	○		SuperV-T	HA	25xD	**VHM**	AlTiN	Werksnorm	3,000 - 16,000	**51766**	47
														
●	●	●	○	○		SuperV-T	HA	30xD	**VHM**	AlTiN	Werksnorm	3,000 - 14,000	**51767**	48
														
●	●	●	○	○		SuperV-T	HA	40xD	**VHM**	AlTiN	Werksnorm	3,000 - 10,000	**51768**	49
Spiralbohrer kurz														
														
○	○	○	●	○		N	zyl.		**VHM**	TiAlN nano	Werksnorm	1,000 - 12,000	**51290**	50
Spiralbohrer mit verst. Zylinderschaft														
														
○		○			●	H	HA	~3xD	**VHM**	AlTiN	DIN 6537K	2,600 - 14,100	**51146**	51
Einlippenbohrer SuperT-NXL														
														
●	○	●	○	○	○	SuperT-NXL TBM-SEH			**HM**	TiN	Werksnorm	5,000 - 25,000	**65030**	52
														
●	○	●	○	○	○	SuperT-NXL TBM-SEH			**HM**	TiN	Werksnorm	5,000 - 22,000	**65031**	53
														
●	○	●	○	○	○	SuperT-NXL TBM-SEH			**HM**	TiN	Werksnorm	4,000 - 22,000	**65032**	54
														
●	○	●	○	○	○	SuperT-NXL TBM-SEH			**HM**	TiN	Werksnorm	5,000 - 22,000	**65033**	55
Spiralbohrer extra kurz														
														
○	●	○	○	●		V18	zyl.	~3xD	**HSS-Co**	AlTiZrN	DIN 1897	1,000 - 13,000	**61131**	56

P	M	K	N	S	H	Typ	Schaft-form	Bohrtiefe	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite
Spiralbohrer kurz														
														
○	●	○	○	●		V18	zyl.	~5xD	**HSS-Co**	AlTiZrN	DIN 338	1,000 - 13,000	**61232**	58
V16-Spiralbohrer														
														
●	●	●	●	●	○	V16	zyl.	~5xD	**M42**	Bronze-VAP	DIN 338	1,000 - 13,000	**71018**	60
V16-Spiralbohrer-Sätze														
														
●	●	●	●	●	○	V16	zyl.	~5xD	**M42**	Bronze-VAP	DIN 338		**71019**	62
V16-Pocket-Satz (Spiralbohrer, Gewindebohrer und Senker)														
														
●	○	○	○			N	zyl.				Werksnorm		**71020**	63
Stangenbohrer, Länge 6 inches														
														
●		●	●			N	zyl.		**HSS**	blank	NAS 907	1,500 - 8,500	**71140**	64
														
●		●	●			N	zyl.		**HSS**	nitriert	NAS 907	1,500 - 8,000	**71142**	65
Stangenbohrer, Länge 12 inches														
														
●		●	●			N	zyl.		**HSS**	blank	NAS 907	1,500 - 8,500	**71141**	66
														
●		●	●			N	zyl.		**HSS**	nitriert	NAS 907	1,500 - 8,000	**71143**	67

Gewindebohrer für Metrische ISO-Gewinde

P	M	K	N	S	H	Typ	Form	Toleranz-klasse	Schneidstoff	Oberfläche	Norm	d1	Katalog-Nr.	Progr. Seite
														
●	●	○	○	●		Produktiv N-X	B	6HX	**HSS-E**	AlTiZrN	~DIN 371/ ~DIN 376	M2 - M42	**53733**	68
														
●	●	○	○	○		Produktiv N-X LH	B	6HX	**HSS-E**	AlTiZrN	DIN 371/ DIN 376	M2 - M30	**53734**	69
														
●	●	○	○	○		Produktiv N-X	B	6HX	**HSS-E-PM**	AlTiZrN	DIN 371/ DIN 376	M3 - M20	**53735**	70
														
●	●	○	○	○		Produktiv N-X	B	6HX	**HSS-E-PM**	AlTiZrN	DIN 371/ DIN 376	M5 - M30	**53736**	71
														
●	●	○	○	○		Produktiv N-X	B	6H+0,1	**HSS-E**	AlTiZrN	DIN 371/ DIN 376	M2 - M30	**53737**	72
														
●	●	○	○	○		Produktiv N-X	B	6GX	**HSS-E**	AlTiZrN	DIN 371/ DIN 376	M2 - M30	**53738**	73
														
●	●	○	○	○		Produktiv N-X	B	6HX	**HSS-E**	AlTiZrN	Werksnorm	M3 - M20	**53739**	74
														
●	●	○	○	○		Intensiv N-X	C	6HX	**HSS-E**	TiAlN-H	~DIN 371/ ~DIN 376	M2 - M42	**53746**	75
														
●	●	○	○	○		Intensiv N-X LH	C	6HX	**HSS-E**	TiAlN-H	DIN 371/ DIN 376	M2 - M30	**53747**	76
														
●	●	○	○	○		Intensiv N-X	C	6HX	**HSS-E-PM**	TiAlN-H	DIN 371/ DIN 376	M3 - M20	**53748**	77
														
●	●	○	○	○		Intensiv N-X	C	6HX	**HSS-E-PM**	TiAlN-H	DIN 371/ DIN 376	M5 - M30	**53749**	78
														
●	●	○	○	○		Intensiv N-X	E	6HX	**HSS-E**	TiAlN-H	DIN 371/ DIN 376	M2 - M30	**53760**	79
														
●	●	○	○	○		Intensiv N-X	C	6H+0,1	**HSS-E**	TiAlN-H	DIN 371/ DIN 376	M2 - M30	**53750**	80
														
●	●	○	○	○		Intensiv N-X	C	6GX	**HSS-E**	TiAlN-H	DIN 371/ DIN 376	M2 - M30	**53751**	81
														
●	●	○	○	○		Intensiv N-X	C	6HX	**HSS-E**	TiAlN-H	Werksnorm	M3 - M20	**53752**	82
														
●	○	○	○			Produktiv N	B	ISO2/6H	**HSS-E**	TiN	DIN 371/ DIN 376	M3 - M20	**63033**	83

P	M	K	N	S	H	Typ	Form	Toleranz-klasse	Schneidstoff	Oberfläche	Norm	d1	Katalog-Nr.	Progr. Seite

Gewindebohrer für Metrische ISO-Gewinde

						H	C	6HX	HSS-E	TiCN	DIN 376	M16 - M39	53646	84

						H	C	6HX	HSS-E	TiCN	~DIN 376	M16 - M39	53647	85

						Produktiv H	B	ISO2/6H	HSS-E	TiCN	DIN 371/ DIN 376	M2 - M10	53642	86

						Produktiv H	B	ISO2/6H	HSS-E-PM	TiCN	DIN 371/ DIN 376	M3 - M16	53640	87

						Intensiv H	C	ISO2/6H	HSS-E	nitriert	DIN 371	M3 - M10	73661	88

						Intensiv H	C	ISO2/6H	HSS-E	nitriert	DIN 376	M12 - M20	73664	89

						Intensiv H	C	ISO2/6H	HSS-E	TiCN	DIN 371/ DIN 376	M2 - M16	53661	90

						Intensiv H	C	ISO2/6H	HSS-E-PM	TiAlN	DIN 371/ DIN 376	M4 - M20	53664	91

						H	D	6HX	HSS-E-PM	TiCN	DIN 371/ DIN 376	M3 - M16	53676	92

Gewindebohrer für Metrische ISO-Feingewinde

						Produktiv N-X	B	6HX	HSS-E	AlTiZrN	DIN 374	M3 x 0,35 - M24 x 2	53778	93

						Produktiv N-X	B	6HX	HSS-E-PM	AlTiZrN	DIN 374	M8 x 1 - M24 x 1,5	53789	94

						Produktiv N-X	B	6HX	HSS-E-PM	AlTiZrN	DIN 374	M8 x 1 - M24 x 1,5	53790	95

						Produktiv N-X	B	6GX	HSS-E	AlTiZrN	DIN 374	M6 x 0,75 - M24 x 1,5	53779	96

						Intensiv N-X	C	6HX	HSS-E	TiAlN-H	DIN 374	M3 x 0,35 - M24 x 2	53780	97

						Intensiv N-X	C	6HX	HSS-E-PM	TiAlN-H	DIN 374	M8 x 1 - M24 x 1,5	53791	98

P	M	K	N	S	H	Typ	Form	Toleranz-klasse	Schneidstoff	Oberfläche	Norm	d1	Katalog-Nr.	Progr. Seite
Gewindebohrer für Metrische ISO-Feingewinde														
														
●	●	○	○	○		Intensiv N-X	C	6HX	**HSS-E-PM**	TiAlN-H	DIN 374	M8 x 1 - M24 x 1,5	**53792**	99
														
●	●	○	○	○		Intensiv N-X	E	6HX	**HSS-E**	TiAlN-H	DIN 374	M6 x 0,75 - M24 x 1,5	**53770**	100
														
●	●	○	○	○		Intensiv N-X	C	6GX	**HSS-E**	TiAlN-H	DIN 374	M6 x 0,75 - M24 x 1,5	**53781**	101
														
≤ 1200						Intensiv H	C	ISO2/6H	**HSS-E**	nitriert	DIN 374	M8 x 0,75 - M24 x 1,5	**73647**	102
Gewindebohrer für UNC-Gewinde														
														
●	●	○	○	○		Produktiv N-X	B	2BX	**HSS-E**	AlTiZrN	DIN 371/ DIN 376	2 - 56 - 1 - 8	**53782**	103
														
●	●	○	○	○		Intensiv N-X	C	2BX	**HSS-E**	TiAlN-H	DIN 371/ DIN 376	2 - 56 - 1 - 8	**53783**	104
Gewindebohrer für UNF-Gewinde														
														
●	●	○	○	○		Produktiv N-X	B	2BX	**HSS-E**	AlTiZrN	~DIN 371/ ~DIN 374	2 - 64 - 1 - 12	**53784**	105
														
●	●	○	○	○		Intensiv N-X	C	2BX	**HSS-E**	TiAlN-H	~DIN 371/ ~DIN 374	2 - 64 - 1 - 12	**53785**	106
Gewindebohrer für Whitworth-Rohrgewinde														
														
●	●	○	○	○		Intensiv N-X	E		**HSS-E**	TiAlN-H	DIN 5156	G1/16 - G1	**53775**	107
Gewindeformer für Metrische ISO-Gewinde														
														
●	●	●	○	●		Durativ N-X	C	4HX/6HX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 376	M1 - M20	**53630**	108
														
●	●	●	○	●		Durativ N-X	C	6GX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 376	M2 - M20	**53631**	109

P	M	K	N	S	H	Typ	Form	Toleranz-klasse	Schneidstoff	Oberfläche	Norm	d1	Katalog-Nr.	Progr. Seite
Gewindeformer für Metrische ISO-Feingewinde														
														
●	●	●	○	●		Durativ N-X	C	6HX	**HSS-E-PM**	TiCN	~DIN 374	M3 x 0,35 - M24 x 2	**53632**	110
Gewindeformer für UNC-Gewinde														
														
●	●	●	○	●		Durativ N-X	C	2BX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 376	4 - 40 - 3/4 - 10	**53633**	111
Gewindeformer für UNF-Gewinde														
														
●	●	●	○	●		Durativ N-X	C	2BX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 374	4 - 48 - 3/4 - 16	**53634**	112
Gewindeformer für Whitworth-Rohrgewinde														
														
●	●	●	○	●		Durativ N-X	C		**HSS-E-PM**	TiCN	DIN 2189	G1/8 - G1/2	**53635**	113
Kühlkanal-Gewindeformer für Metr. ISO-Gewinde														
														
●	●	●	○	●		Durativ N-X	C	6HX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 376	M5 - M20	**53610**	114
														
●	●	●	○	●		Durativ N-X	E	6HX	**HSS-E-PM**	TiCN	~DIN 371/ ~DIN 376	M2 - M20	**53618**	115
Kühlkanal-Gewindeformer für Metr. ISO-Feingewinde														
														
●	●	●	○	●		Durativ N-X	C	6HX	**HSS-E-PM**	TiCN	~DIN 374	M8 x 1 - M20 x 1,5	**53612**	116
														
●	●	●	○	●		Durativ N-X	E	6HX	**HSS-E-PM**	TiCN	~DIN 374	M8 x 1 - M20 x 1,5	**53619**	117
Bohrgewindefräser														
														
●	●	●	●	●	≤ 66	TMD-NX			**VHM**	TiSiN	Werksnorm	M2 - M16 x 1,5	**53948**	118
														
●	●	●	●	●	≤ 66	TMD-NX			**VHM**	TiSiN	Werksnorm	UNF No 1 - UNF 5/8	**53949**	119

P	M	K	N	S	H	Typ	Form	Toleranz-klasse	Schneidstoff	Oberfläche	Norm	d1	Katalog-Nr.	Progr. Seite

Bohrgewindefräser

●	●	●	●	●	≤ 66	TMD-NX		**VHM**	TiSiN	Werksnorm	G1/16-G1/8 - G1/2-G5/8-G3/4	**53950**	120

Gewindefräser mit Senkfase für Metrische ISO-Gewinde

●	●	●	○	○		TMC-NX SP		**VHM**	AlCrN	Werksnorm	M3 - M16 x 1,5	**53890**	121

Gewindefräser ohne Senkfase für Metr. ISO-Gewinde

●	○	●	●	○	≤ 55	TM SP		**VHM**	TiCN	Werksnorm	M6 - M20	**53860**	122

●	●	●	●	●	≤ 55	TMU SP		**VHM**	TiCN	Werksnorm	> 10 - > 30	**73830**	123

Gewindefräser ohne Senkfase für Whitworth-Rohrgewinde

●	○	●	●	○	≤ 55	TM SP		**VHM**	TiCN	Werksnorm	G1/8 - G3/8	**53831**	124

Mehrbereichs-Gewindefräser für Whitworth-Rohrgewinde

●	●	●	●	●	≤ 55	TMU SP		**VHM**	TiCN	Werksnorm	≥ 1/4 - ≥ 1	**53832**	125

Mikro-Gewindefräser für Metrische ISO-Gewinde

●	●	●	●	●	≤ 55	MTM-NX SP		**VHM**	TiCN	Werksnorm	M1,6 - M20	**53892**	126

●	●	●	●	●		TM SP		**VHM**	TiCN	Werksnorm	M1,6 - M16	**53840**	127

				○	●	TM SP		**VHM**	TiAlN	Werksnorm	M2 - M12	**53850**	128

Mikro-Gewindefräser für Whitworth-Rohrgewinde

●	●	●	●	●		TM SP		**VHM**	TiCN	Werksnorm	G1/16-G1/8 - G1-G2	**53841**	129

P	M	K	N	S	H	Typ	Schaftform	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite

SuperF-UT-Fräser Z

●	●			●		SuperF-UT Z	HB	**VHM**	AlTiN+	Werksnorm	3,000 - 20,000	**54577**	130

SuperF-UT-Fräser ZS

●	●			●		SuperF-UT ZS	HB	**VHM**	AlTiN+	Werksnorm	3,000 - 20,000	**54578**	131

●	●	●	○	●		SuperF-UT ZS-7	HB	**VHM**	AlTiN+	Werksnorm	6,000 - 20,000	**54581**	133

●	●	●	○	●		SuperF-UT ZS-r	HB	**VHM**	AlTiN+	Werksnorm	6,000 - 20,000	**54555**	132

SuperF-UT-Fräser N-5

●	●	●	●	●		SuperF-UT N-5	HA	**VHM**	TiAlN	Werksnorm	4,000 - 20,000	**54583**	134

●	●	●	●	●		SuperF-UT N-5	HB	**VHM**	TiAlN	Werksnorm	4,000 - 20,000	**54584**	135

SuperF-UT-Fräser FS²

○	●	○	●	●	○	SuperF-UT FS²	HB	**VHM**	TiAlZrN	Werksnorm	8,000 - 20,000	**64560**	136

SuperF-UT-Fräser NX-3

●	●	●	●	●		SuperF-UT NX-3	HA	**VHM**	TiAlSiN	Werksnorm	3,000 - 20,000	**54586**	137

●	●	●	●	●		SuperF-UT NX-3	HB	**VHM**	TiAlSiN	Werksnorm	3,000 - 20,000	**54587**	138

SuperF-UT-Fräser NX

●	●	●	●	●		SuperF-UT NX	HB	**VHM**	TiAlSiN	DIN 6527K	3,000 - 20,000	**54589**	139

P	M	K	N	S	H	Typ	Schaftform	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite
SuperF-UT-Fräser NX													
													
●	●	●	●	●		SuperF-UT NX-IK	HB	**VHM**	TiAlSiN	DIN 6527L	6,000 - 25,000	**54585**	140
SuperF-UT-Fräser NX Micro													
													
●	●	●	●	●	○	SuperF-UT NX Micro	zyl.	**VHM**	TiSiN	Werksnorm	0,800 - 3,000	**54594**	141
													
●	●	●	●	●	○	SuperF-UT NX Micro	zyl.	**VHM**	TiSiN	Werksnorm	1,000 - 3,000	**54595**	142
SuperF-UT-Fräser Ti													
							R±0,05						
○	○			●		SuperF-UT Ti	HA	**VHM**	ZrN	DIN 6527L	6,000 - 20,000	**54560**	143
							R±0,05						
○	○			●		SuperF-UT Ti	HB	**VHM**	ZrN	DIN 6527L	6,000 - 20,000	**54561**	144
SuperF-UT-Fräser S													
													
○	○	○	○	○		SuperF-UT S	HA	**VHM**	AlTiN nano	DIN 6527L	3,000 - 20,000	**54556**	145
SuperF-UT-Fräser N²													
													
●	○	●	○	○	○	SuperF-UT N²	HB	**VHM**	TiAlZrN	DIN 6527L	3,000 - 25,000	**64552**	146
SuperF-UT-Fräser NL													
													
●	○	●	○	○	○	SuperF-UT NL	HB	**VHM**	TiAlN	Werksnorm	6,000 - 25,000	**54553**	147
SuperF-UT-Fräser N-r													
							R±0,05						
●	○		●	●		SuperF-UT N-r	HB	**VHM**	AlCrN	DIN 6527L	3,000 - 20,000	**54550**	148

P	M	K	N	S	H	Typ	Schaftform	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite

SuperF-UT-Fräser VA-X²

○	●		○	●		SuperF-UT VA-X²	HB	**VHM**	TiAlZrN	DIN 6527L	3,000 - 25,000	**64553**	150

SuperF-UT-Fräser VA-r

○	●		○	●		SuperF-UT VA-r	HB	**VHM**	TiAlSiN	DIN 6527L	3,000 - 20,000	**54542**	151

SuperF-UT-Fräser Al

			●			SuperF-UT Al-L	HB	**VHM**	blank	Werksnorm	5,000 - 20,000	**74556**	154

			●			SuperF-UT Al-XL	HB	**VHM**	blank	Werksnorm	6,000 - 20,000	**74558**	153

			●			SuperF-UT Al-r	HB	**VHM**	blank	Werksnorm	6,000 - 25,000	**74562**	155

			●			SuperF-UT Al-X	HB	**VHM**	DLC	Werksnorm	5,000 - 20,000	**54592**	156

P	M	K	N	S	H	Typ	Schaftform	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite

SuperF-UT-Fräser Z, Sätze

●	●			●		SuperF-UT Z	HB	**VHM**	AlTiN+	Werksnorm		**78882**	157

SuperF-UT-Fräser N², Sätze

●	○	●	○	○	○	SuperF-UT N²	HB	**VHM**	TiAlZrN	DIN 6527L		**78883**	158

Kopierfräser mit Torusanschliff

○		●			●	H	HA	**VHM**	TiAlSiN	Werksnorm	1,000 - 16,000	**54304**	159

○		●			●	H	HA	**VHM**	TiAlSiN	Werksnorm	1,000 - 16,000	**54305**	160

●	●	●	○	●	○	NH	HA	**VHM**	TiAlSiN	Werksnorm	0,500 - 12,000	**54302**	161

Entgratfräser 90°

●	●	●	●	●	○	SuperAF-90	HB	**VHM**	TiAlZrN	Werksnorm	6,000 - 20,000	**53399**	162

P	M	K	N	S	H	Typ	Schaftform	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite

VHM-Hochleistungs-Reibahlen

●	●	○		●	●	SuperR-HS-KS	HA	**VHM**	AlTiN nano	Werksnorm	14,000 - 42,000	**72874**	163

●	●	○		●	●	SuperR-HS-KD	HA	**VHM**	AlTiN nano	Werksnorm	14,000 - 42,000	**72875**	164

Schrumpfverlängerungen

							HA		blank	Werksnorm		**78719**	165

Kegelsenker 90°, spiralisiert

●	●	●	○	○		V-NX	zyl.	**HSS-Co**	AlTiN	DIN 335	6,300 - 40,000	**52348**	166

●	●	●	○	○		V-NX	3-Flächen	**HSS-Co**	AlTiN	DIN 335	6,300 - 40,000	**52350**	167

Kegelsenkersätze 90°, spiralisiert

●	●	●	○	○		V-NX	zyl.	**HSS-Co**	AlTiN	DIN 335		**52398**	168

●	●	●	○	○		V-NX	3-Flächen	**HSS-Co**	AlTiN	DIN 335		**52399**	169

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung

Katalog-Nr. 51673

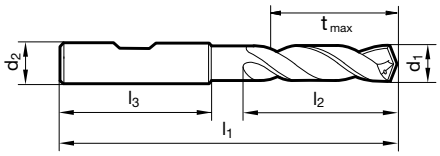
SuperV-U | 3xD | DIN 6537 K | VHM | TiAlN nano | 140° | m7 | R | HB

P	M	K	N	S	H
●		●	○	○	○

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,040	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,110	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,250	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,410	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000
6,530	8,000	79,000	34,000	36,000
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,340	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,720	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,510	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,100	14,000	107,000	60,000	45,000
12,200	14,000	107,000	60,000	45,000
12,300	14,000	107,000	60,000	45,000
12,400	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,600	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
12,800	14,000	107,000	60,000	45,000
12,900	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000
13,100	14,000	107,000	60,000	45,000
13,200	14,000	107,000	60,000	45,000
13,300	14,000	107,000	60,000	45,000
13,400	14,000	107,000	60,000	45,000
13,490	14,000	107,000	60,000	45,000
13,500	14,000	107,000	60,000	45,000
13,600	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
13,800	14,000	107,000	60,000	45,000
13,900	14,000	107,000	60,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,000	14,000	107,000	60,000	45,000
14,100	16,000	115,000	65,000	48,000
14,200	16,000	115,000	65,000	48,000
14,290	16,000	115,000	65,000	48,000
14,300	16,000	115,000	65,000	48,000
14,400	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,600	16,000	115,000	65,000	48,000
14,680	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
14,800	16,000	115,000	65,000	48,000
14,900	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,080	16,000	115,000	65,000	48,000
15,100	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,300	16,000	115,000	65,000	48,000
15,400	16,000	115,000	65,000	48,000
15,480	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,600	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
15,800	16,000	115,000	65,000	48,000
15,870	16,000	115,000	65,000	48,000
15,900	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,270	18,000	123,000	73,000	48,000
16,500	18,000	123,000	73,000	48,000
16,670	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,070	18,000	123,000	73,000	48,000
17,460	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
17,860	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,260	20,000	131,000	79,000	50,000
18,500	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,050	20,000	131,000	79,000	50,000
19,250	20,000	131,000	79,000	50,000
19,446	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
19,840	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung

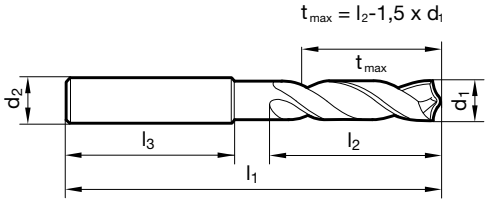
Katalog-Nr. 51750

SuperV-S | 3xD | DIN 6537 K | VHM | TiAl-SiN | 140° | m7 | R | HA

P	M	K	N	S	H
●				○	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,200	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
12,800	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000
13,300	14,000	107,000	60,000	45,000
13,500	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
14,000	14,000	107,000	60,000	45,000
14,200	16,000	115,000	65,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,290	16,000	115,000	65,000	48,000
14,300	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,300	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,300	18,000	123,000	73,000	48,000
16,500	18,000	123,000	73,000	48,000
16,900	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,300	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,500	20,000	131,000	79,000	50,000
18,900	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,050	20,000	131,000	79,000	50,000
19,300	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung

Katalog-Nr. 51687

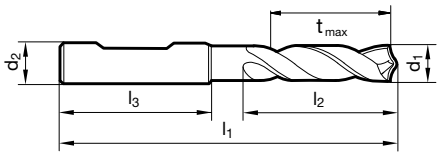
SuperV-U | 5xD | DIN 6537L | VHM | TiAlN nano | 140° | m7 | R | HB

P	M	K	N	S	H
●		●	○	○	○

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
13,500	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,200	16,000	133,000	83,000	48,000
14,290	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51676

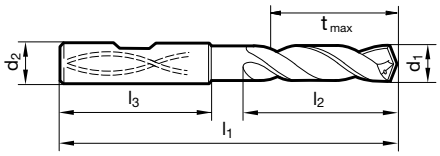
SuperV-IK-U | 3xD | DIN 6537 K | VHM | TiAlN nano | 140° | m7 | R | HB

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,040	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,110	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,250	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,410	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,650	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,750	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000
6,530	8,000	79,000	34,000	36,000
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,450	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,550	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,340	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,720	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,510	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,100	14,000	107,000	60,000	45,000
12,200	14,000	107,000	60,000	45,000
12,300	14,000	107,000	60,000	45,000
12,400	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,600	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
12,800	14,000	107,000	60,000	45,000
12,900	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000
13,100	14,000	107,000	60,000	45,000
13,200	14,000	107,000	60,000	45,000
13,300	14,000	107,000	60,000	45,000
13,400	14,000	107,000	60,000	45,000
13,490	14,000	107,000	60,000	45,000
13,500	14,000	107,000	60,000	45,000
13,600	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
13,800	14,000	107,000	60,000	45,000
13,900	14,000	107,000	60,000	45,000
14,000	14,000	107,000	60,000	45,000
14,100	16,000	115,000	65,000	48,000
14,200	16,000	115,000	65,000	48,000
14,290	16,000	115,000	65,000	48,000
14,300	16,000	115,000	65,000	48,000
14,400	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,600	16,000	115,000	65,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,680	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
14,800	16,000	115,000	65,000	48,000
14,900	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,080	16,000	115,000	65,000	48,000
15,100	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,300	16,000	115,000	65,000	48,000
15,400	16,000	115,000	65,000	48,000
15,480	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,600	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
15,800	16,000	115,000	65,000	48,000
15,870	16,000	115,000	65,000	48,000
15,900	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,100	18,000	123,000	73,000	48,000
16,200	18,000	123,000	73,000	48,000
16,270	18,000	123,000	73,000	48,000
16,500	18,000	123,000	73,000	48,000
16,670	18,000	123,000	73,000	48,000
16,900	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,070	18,000	123,000	73,000	48,000
17,200	18,000	123,000	73,000	48,000
17,300	18,000	123,000	73,000	48,000
17,400	18,000	123,000	73,000	48,000
17,460	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
17,600	18,000	123,000	73,000	48,000
17,700	18,000	123,000	73,000	48,000
17,860	18,000	123,000	73,000	48,000
17,900	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,260	20,000	131,000	79,000	50,000
18,300	20,000	131,000	79,000	50,000
18,500	20,000	131,000	79,000	50,000
18,900	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,050	20,000	131,000	79,000	50,000
19,250	20,000	131,000	79,000	50,000
19,300	20,000	131,000	79,000	50,000
19,446	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
19,840	20,000	131,000	79,000	50,000
19,900	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51670

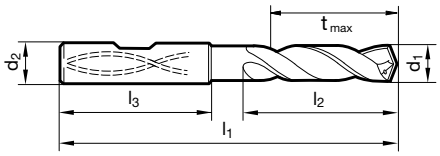
SuperV-VA | 3xD | DIN 6537 K | VHM | AlTiN nano | 140° | m7 | R | HB

P	M	K	N	S	H
	●			○	

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- besonders geeignet für rostfreie Stähle

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,200	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
13,500	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
14,000	14,000	107,000	60,000	45,000
14,200	16,000	115,000	65,000	48,000
14,290	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,500	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,500	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51752

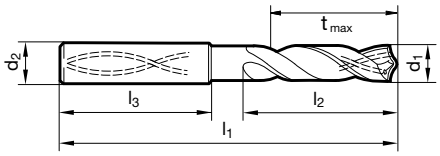
SuperV-S | 3xD | DIN 6537 K | VHM | TiAl-SiN | 140° | m7 | R | HA

P	M	K	N	S	H
●				●	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,200	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
12,800	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000
13,300	14,000	107,000	60,000	45,000
13,500	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
14,000	14,000	107,000	60,000	45,000
14,200	16,000	115,000	65,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,290	16,000	115,000	65,000	48,000
14,300	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,300	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,300	18,000	123,000	73,000	48,000
16,500	18,000	123,000	73,000	48,000
16,900	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,300	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,500	20,000	131,000	79,000	50,000
18,900	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,050	20,000	131,000	79,000	50,000
19,300	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51753

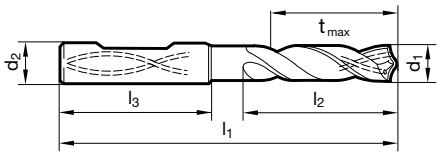
SuperV-S | 3xD | DIN 6537 K | VHM | TiAl-SiN | 140° | m7 | R | HE

P	M	K	N	S	H
●				●	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	62,000	20,000	36,000
3,100	6,000	62,000	20,000	36,000
3,170	6,000	62,000	20,000	36,000
3,200	6,000	62,000	20,000	36,000
3,250	6,000	62,000	20,000	36,000
3,300	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
3,500	6,000	62,000	20,000	36,000
3,570	6,000	62,000	20,000	36,000
3,600	6,000	62,000	20,000	36,000
3,700	6,000	62,000	20,000	36,000
3,800	6,000	66,000	24,000	36,000
3,900	6,000	66,000	24,000	36,000
3,970	6,000	66,000	24,000	36,000
4,000	6,000	66,000	24,000	36,000
4,100	6,000	66,000	24,000	36,000
4,200	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
4,370	6,000	66,000	24,000	36,000
4,400	6,000	66,000	24,000	36,000
4,500	6,000	66,000	24,000	36,000
4,600	6,000	66,000	24,000	36,000
4,650	6,000	66,000	24,000	36,000
4,700	6,000	66,000	24,000	36,000
4,760	6,000	66,000	28,000	36,000
4,800	6,000	66,000	28,000	36,000
4,900	6,000	66,000	28,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,160	6,000	66,000	28,000	36,000
5,200	6,000	66,000	28,000	36,000
5,300	6,000	66,000	28,000	36,000
5,400	6,000	66,000	28,000	36,000
5,500	6,000	66,000	28,000	36,000
5,550	6,000	66,000	28,000	36,000
5,560	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
5,700	6,000	66,000	28,000	36,000
5,800	6,000	66,000	28,000	36,000
5,900	6,000	66,000	28,000	36,000
5,950	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,100	8,000	79,000	34,000	36,000
6,200	8,000	79,000	34,000	36,000
6,300	8,000	79,000	34,000	36,000
6,350	8,000	79,000	34,000	36,000
6,400	8,000	79,000	34,000	36,000
6,500	8,000	79,000	34,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	79,000	34,000	36,000
6,700	8,000	79,000	34,000	36,000
6,750	8,000	79,000	34,000	36,000
6,800	8,000	79,000	34,000	36,000
6,900	8,000	79,000	34,000	36,000
7,000	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
7,140	8,000	79,000	41,000	36,000
7,200	8,000	79,000	41,000	36,000
7,300	8,000	79,000	41,000	36,000
7,400	8,000	79,000	41,000	36,000
7,500	8,000	79,000	41,000	36,000
7,540	8,000	79,000	41,000	36,000
7,600	8,000	79,000	41,000	36,000
7,700	8,000	79,000	41,000	36,000
7,800	8,000	79,000	41,000	36,000
7,900	8,000	79,000	41,000	36,000
7,940	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000
8,100	10,000	89,000	47,000	40,000
8,200	10,000	89,000	47,000	40,000
8,300	10,000	89,000	47,000	40,000
8,330	10,000	89,000	47,000	40,000
8,400	10,000	89,000	47,000	40,000
8,500	10,000	89,000	47,000	40,000
8,600	10,000	89,000	47,000	40,000
8,700	10,000	89,000	47,000	40,000
8,730	10,000	89,000	47,000	40,000
8,800	10,000	89,000	47,000	40,000
8,900	10,000	89,000	47,000	40,000
9,000	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
9,130	10,000	89,000	47,000	40,000
9,200	10,000	89,000	47,000	40,000
9,250	10,000	89,000	47,000	40,000
9,300	10,000	89,000	47,000	40,000
9,400	10,000	89,000	47,000	40,000
9,500	10,000	89,000	47,000	40,000
9,520	10,000	89,000	47,000	40,000
9,600	10,000	89,000	47,000	40,000
9,700	10,000	89,000	47,000	40,000
9,800	10,000	89,000	47,000	40,000
9,900	10,000	89,000	47,000	40,000
9,920	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,100	12,000	102,000	55,000	45,000
10,200	12,000	102,000	55,000	45,000
10,300	12,000	102,000	55,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	102,000	55,000	45,000
10,400	12,000	102,000	55,000	45,000
10,500	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
10,700	12,000	102,000	55,000	45,000
10,800	12,000	102,000	55,000	45,000
10,900	12,000	102,000	55,000	45,000
11,000	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
11,110	12,000	102,000	55,000	45,000
11,200	12,000	102,000	55,000	45,000
11,300	12,000	102,000	55,000	45,000
11,400	12,000	102,000	55,000	45,000
11,500	12,000	102,000	55,000	45,000
11,600	12,000	102,000	55,000	45,000
11,700	12,000	102,000	55,000	45,000
11,800	12,000	102,000	55,000	45,000
11,900	12,000	102,000	55,000	45,000
11,910	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
12,200	14,000	107,000	60,000	45,000
12,500	14,000	107,000	60,000	45,000
12,700	14,000	107,000	60,000	45,000
12,800	14,000	107,000	60,000	45,000
13,000	14,000	107,000	60,000	45,000
13,300	14,000	107,000	60,000	45,000
13,500	14,000	107,000	60,000	45,000
13,700	14,000	107,000	60,000	45,000
14,000	14,000	107,000	60,000	45,000
14,200	16,000	115,000	65,000	48,000
14,290	16,000	115,000	65,000	48,000
14,300	16,000	115,000	65,000	48,000
14,500	16,000	115,000	65,000	48,000
14,700	16,000	115,000	65,000	48,000
15,000	16,000	115,000	65,000	48,000
15,200	16,000	115,000	65,000	48,000
15,300	16,000	115,000	65,000	48,000
15,500	16,000	115,000	65,000	48,000
15,700	16,000	115,000	65,000	48,000
16,000	16,000	115,000	65,000	48,000
16,300	18,000	123,000	73,000	48,000
16,500	18,000	123,000	73,000	48,000
16,900	18,000	123,000	73,000	48,000
17,000	18,000	123,000	73,000	48,000
17,300	18,000	123,000	73,000	48,000
17,500	18,000	123,000	73,000	48,000
18,000	18,000	123,000	73,000	48,000
18,500	20,000	131,000	79,000	50,000
18,900	20,000	131,000	79,000	50,000
19,000	20,000	131,000	79,000	50,000
19,050	20,000	131,000	79,000	50,000
19,300	20,000	131,000	79,000	50,000
19,500	20,000	131,000	79,000	50,000
20,000	20,000	131,000	79,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

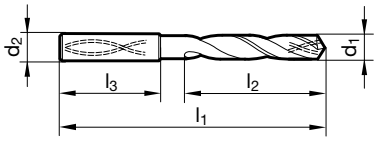
Katalog-Nr. 71791

SuperV- Al | 5xD | DIN 6537L | VHM | blank | 140° | m7 | R | HA

P	M	K	N	S	H
			●		

Arbeitsrichtwerte Seite 172

- Kegelmantelanschliff
- Hauptschneidenform leicht konkav
- optimierte Schneidengeometrie
- scharfes Schnittverhalten



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,340	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,300	12,000	118,000	71,000	45,000
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,100	14,000	124,000	77,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,600	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
12,800	14,000	124,000	77,000	45,000
12,900	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,100	14,000	124,000	77,000	45,000
13,300	14,000	124,000	77,000	45,000
13,400	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
13,800	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,100	16,000	133,000	83,000	48,000
14,200	16,000	133,000	83,000	48,000
14,290	16,000	133,000	83,000	48,000
14,300	16,000	133,000	83,000	48,000
14,400	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
14,800	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,100	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,300	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
15,800	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
16,700	18,000	143,000	93,000	48,000
16,900	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
17,700	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
18,900	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,050	20,000	153,000	101,000	50,000
19,300	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51681

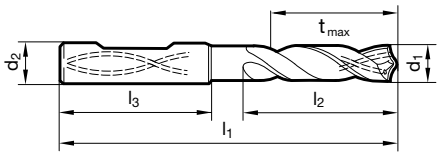
SuperV-IK-U | 5xD | DIN 6537L | VHM | TiAlN nano | 140° | m7 | R | HB

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000
6,600	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000
10,320	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
13,700	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,200	16,000	133,000	83,000	48,000
14,290	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,050	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51674

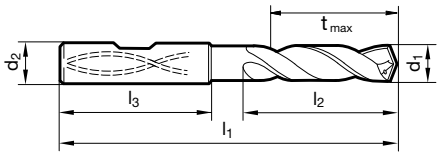
SuperV-VA | 5xD | DIN 6537L | VHM | AlTiN nano | 140° | m7 | R | HB

P	M	K	N	S	H
	●			○	

Arbeitsrichtwerte Seite 172

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- besonders geeignet für rostfreie Stähle

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
13,500	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,200	16,000	133,000	83,000	48,000
14,290	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51786

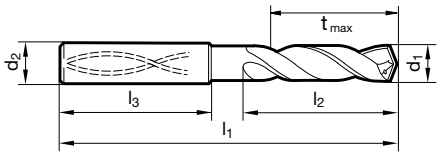
SuperV-X | 5xD | DIN 6537L | VHM | TiAlN nano | 140° | m7 | R | HA

P	M	K	N	S	H
●	○	○		○	○

Arbeitsrichtwerte Seite 176

- Kegelmantelanschliff
- Hauptschneidenform konkav
- optimierte Schneidengeometrie
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,040	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,110	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,410	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000
6,530	8,000	91,000	53,000	36,000
6,550	8,000	91,000	53,000	36,000
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,550	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,650	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,340	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,550	10,000	103,000	61,000	40,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,720	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,510	12,000	118,000	71,000	45,000
11,550	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,100	14,000	124,000	77,000	45,000
12,200	14,000	124,000	77,000	45,000
12,300	14,000	124,000	77,000	45,000
12,400	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,600	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
12,800	14,000	124,000	77,000	45,000
12,900	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,100	14,000	124,000	77,000	45,000
13,200	14,000	124,000	77,000	45,000
13,300	14,000	124,000	77,000	45,000
13,400	14,000	124,000	77,000	45,000
13,490	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
13,600	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
13,800	14,000	124,000	77,000	45,000
13,890	14,000	124,000	77,000	45,000
13,900	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,100	16,000	133,000	83,000	48,000
14,200	16,000	133,000	83,000	48,000
14,290	16,000	133,000	83,000	48,000
14,300	16,000	133,000	83,000	48,000
14,400	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,600	16,000	133,000	83,000	48,000
14,680	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
14,800	16,000	133,000	83,000	48,000
14,900	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,080	16,000	133,000	83,000	48,000
15,100	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,300	16,000	133,000	83,000	48,000
15,400	16,000	133,000	83,000	48,000
15,480	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,550	16,000	133,000	83,000	48,000
15,600	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
15,800	16,000	133,000	83,000	48,000
15,870	16,000	133,000	83,000	48,000
15,900	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,270	18,000	143,000	93,000	48,000
16,300	18,000	143,000	93,000	48,000
16,500	18,000	143,000	93,000	48,000
16,670	18,000	143,000	93,000	48,000
16,700	18,000	143,000	93,000	48,000
16,900	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,070	18,000	143,000	93,000	48,000
17,460	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
17,550	18,000	143,000	93,000	48,000
17,700	18,000	143,000	93,000	48,000
17,860	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,260	20,000	153,000	101,000	50,000
18,500	20,000	153,000	101,000	50,000
18,700	20,000	153,000	101,000	50,000
18,900	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,050	20,000	153,000	101,000	50,000
19,250	20,000	153,000	101,000	50,000
19,300	20,000	153,000	101,000	50,000
19,450	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
19,550	20,000	153,000	101,000	50,000
19,700	20,000	153,000	101,000	50,000
19,800	20,000	153,000	101,000	50,000
19,840	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51754

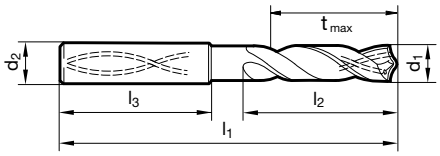
SuperV-S | 5xD | DIN 6537L | VHM | TiAl-SiN | 140° | m7 | R | HA

P	M	K	N	S	H
●				●	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
12,800	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,300	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,200	16,000	133,000	83,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,290	16,000	133,000	83,000	48,000
14,300	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,300	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,300	18,000	143,000	93,000	48,000
16,500	18,000	143,000	93,000	48,000
16,900	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,300	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
18,900	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,050	20,000	153,000	101,000	50,000
19,300	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

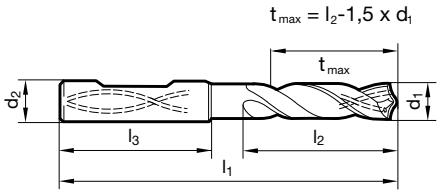
Katalog-Nr. 51755

SuperV-S | 5xD | DIN 6537L | VHM | TiAl-SiN | 140° | m7 | R | HE

P	M	K	N	S	H
●				●	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,170	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,250	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,400	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,570	6,000	66,000	28,000	36,000
3,600	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
3,900	6,000	74,000	36,000	36,000
3,970	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,300	6,000	74,000	36,000	36,000
4,370	6,000	74,000	36,000	36,000
4,400	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,600	6,000	74,000	36,000	36,000
4,650	6,000	74,000	36,000	36,000
4,700	6,000	74,000	36,000	36,000
4,760	6,000	82,000	44,000	36,000
4,800	6,000	82,000	44,000	36,000
4,900	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,160	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,400	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,550	6,000	82,000	44,000	36,000
5,560	6,000	82,000	44,000	36,000
5,600	6,000	82,000	44,000	36,000
5,700	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
5,900	6,000	82,000	44,000	36,000
5,950	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,300	8,000	91,000	53,000	36,000
6,350	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,600	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,750	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
6,900	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,140	8,000	91,000	53,000	36,000
7,200	8,000	91,000	53,000	36,000
7,300	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,540	8,000	91,000	53,000	36,000
7,600	8,000	91,000	53,000	36,000
7,700	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
7,900	8,000	91,000	53,000	36,000
7,940	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,300	10,000	103,000	61,000	40,000
8,330	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000
8,700	10,000	103,000	61,000	40,000
8,730	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
8,900	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,130	10,000	103,000	61,000	40,000
9,200	10,000	103,000	61,000	40,000
9,250	10,000	103,000	61,000	40,000
9,300	10,000	103,000	61,000	40,000
9,400	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,520	10,000	103,000	61,000	40,000
9,600	10,000	103,000	61,000	40,000
9,700	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
9,900	10,000	103,000	61,000	40,000
9,920	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
10,320	12,000	118,000	71,000	45,000
10,400	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
10,600	12,000	118,000	71,000	45,000
10,700	12,000	118,000	71,000	45,000
10,800	12,000	118,000	71,000	45,000
10,900	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,100	12,000	118,000	71,000	45,000
11,110	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,300	12,000	118,000	71,000	45,000
11,400	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,600	12,000	118,000	71,000	45,000
11,700	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
11,900	12,000	118,000	71,000	45,000
11,910	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,200	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
12,700	14,000	124,000	77,000	45,000
12,800	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,300	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
13,700	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,200	16,000	133,000	83,000	48,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
14,290	16,000	133,000	83,000	48,000
14,300	16,000	133,000	83,000	48,000
14,500	16,000	133,000	83,000	48,000
14,700	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,200	16,000	133,000	83,000	48,000
15,300	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
15,700	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,300	18,000	143,000	93,000	48,000
16,500	18,000	143,000	93,000	48,000
16,900	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,300	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
18,900	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,050	20,000	153,000	101,000	50,000
19,300	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51791

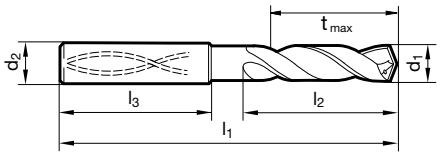
SuperV-X | 7xD | WN | VHM | TiAlN nano | 140° | m7 | R | HA

P	M	K	N	S	H
●	○	○		○	○

Arbeitsrichtwerte Seite 176

- Kegelmantelanschliff
- Hauptschneidenform konkav
- optimierte Schneidengeometrie
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	70,000	30,000	36,000
3,100	6,000	70,000	30,000	36,000
3,170	6,000	70,000	30,000	36,000
3,200	6,000	70,000	30,000	36,000
3,250	6,000	70,000	30,000	36,000
3,300	6,000	70,000	30,000	36,000
3,400	6,000	75,000	35,500	36,000
3,500	6,000	75,000	35,500	36,000
3,570	6,000	75,000	35,500	36,000
3,600	6,000	75,000	35,500	36,000
3,700	6,000	75,000	35,500	36,000
3,800	6,000	75,000	37,500	36,000
3,900	6,000	75,000	37,500	36,000
3,970	6,000	75,000	37,500	36,000
4,000	6,000	75,000	37,500	36,000
4,040	6,000	75,000	37,500	36,000
4,100	6,000	75,000	37,500	36,000
4,200	6,000	75,000	37,500	36,000
4,300	6,000	85,000	45,000	36,000
4,370	6,000	85,000	45,000	36,000
4,400	6,000	85,000	45,000	36,000
4,500	6,000	85,000	45,000	36,000
4,600	6,000	85,000	45,000	36,000
4,650	6,000	85,000	45,000	36,000
4,700	6,000	85,000	45,000	36,000
4,760	6,000	90,000	50,000	36,000
4,800	6,000	90,000	50,000	36,000
4,900	6,000	90,000	50,000	36,000
5,000	6,000	90,000	50,000	36,000
5,100	6,000	90,000	50,000	36,000
5,110	6,000	90,000	50,000	36,000
5,160	6,000	90,000	50,000	36,000
5,200	6,000	90,000	50,000	36,000
5,300	6,000	90,000	50,000	36,000
5,400	6,000	97,000	57,000	36,000
5,410	6,000	97,000	57,000	36,000
5,500	6,000	97,000	57,000	36,000
5,550	6,000	97,000	57,000	36,000
5,560	6,000	97,000	57,000	36,000
5,600	6,000	97,000	57,000	36,000
5,700	6,000	97,000	57,000	36,000
5,800	6,000	97,000	57,000	36,000
5,900	6,000	97,000	57,000	36,000
5,950	6,000	97,000	57,000	36,000
6,000	6,000	97,000	57,000	36,000
6,100	8,000	106,000	66,000	36,000
6,200	8,000	106,000	66,000	36,000
6,300	8,000	106,000	66,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,350	8,000	106,000	66,000	36,000
6,400	8,000	106,000	66,000	36,000
6,500	8,000	106,000	66,000	36,000
6,530	8,000	106,000	66,000	36,000
6,550	8,000	106,000	66,000	36,000
6,600	8,000	106,000	66,000	36,000
6,700	8,000	106,000	66,000	36,000
6,750	8,000	106,000	66,000	36,000
6,800	8,000	106,000	66,000	36,000
6,900	8,000	116,000	76,000	36,000
7,000	8,000	116,000	76,000	36,000
7,100	8,000	116,000	76,000	36,000
7,140	8,000	116,000	76,000	36,000
7,200	8,000	116,000	76,000	36,000
7,300	8,000	116,000	76,000	36,000
7,400	8,000	116,000	76,000	36,000
7,500	8,000	116,000	76,000	36,000
7,540	8,000	116,000	76,000	36,000
7,600	8,000	116,000	76,000	36,000
7,700	8,000	116,000	76,000	36,000
7,800	8,000	116,000	76,000	36,000
7,900	8,000	116,000	76,000	36,000
7,940	8,000	116,000	76,000	36,000
8,000	8,000	116,000	76,000	36,000
8,100	10,000	131,000	87,000	40,000
8,200	10,000	131,000	87,000	40,000
8,300	10,000	131,000	87,000	40,000
8,330	10,000	131,000	87,000	40,000
8,400	10,000	131,000	87,000	40,000
8,500	10,000	131,000	87,000	40,000
8,600	10,000	131,000	87,000	40,000
8,700	10,000	131,000	87,000	40,000
8,730	10,000	131,000	87,000	40,000
8,800	10,000	131,000	87,000	40,000
8,900	10,000	131,000	87,000	40,000
9,000	10,000	131,000	87,000	40,000
9,100	10,000	139,000	95,000	40,000
9,130	10,000	139,000	95,000	40,000
9,200	10,000	139,000	95,000	40,000
9,250	10,000	139,000	95,000	40,000
9,300	10,000	139,000	95,000	40,000
9,340	10,000	139,000	95,000	40,000
9,400	10,000	139,000	95,000	40,000
9,500	10,000	139,000	95,000	40,000
9,520	10,000	139,000	95,000	40,000
9,600	10,000	139,000	95,000	40,000
9,700	10,000	139,000	95,000	40,000
9,800	10,000	139,000	95,000	40,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
9,900	10,000	139,000	95,000	40,000
9,920	10,000	139,000	95,000	40,000
10,000	10,000	139,000	95,000	40,000
10,100	12,000	155,000	106,000	45,000
10,200	12,000	155,000	106,000	45,000
10,300	12,000	155,000	106,000	45,000
10,320	12,000	155,000	106,000	45,000
10,400	12,000	155,000	106,000	45,000
10,500	12,000	155,000	106,000	45,000
10,600	12,000	155,000	106,000	45,000
10,700	12,000	155,000	106,000	45,000
10,720	12,000	155,000	106,000	45,000
10,800	12,000	155,000	106,000	45,000
10,900	12,000	155,000	106,000	45,000
11,000	12,000	155,000	106,000	45,000
11,100	12,000	163,000	114,000	45,000
11,110	12,000	163,000	114,000	45,000
11,200	12,000	163,000	114,000	45,000
11,300	12,000	163,000	114,000	45,000
11,400	12,000	163,000	114,000	45,000
11,500	12,000	163,000	114,000	45,000
11,510	12,000	163,000	114,000	45,000
11,600	12,000	163,000	114,000	45,000
11,700	12,000	163,000	114,000	45,000
11,800	12,000	163,000	114,000	45,000
11,900	12,000	163,000	114,000	45,000
11,910	12,000	163,000	114,000	45,000
12,000	12,000	163,000	114,000	45,000
12,100	14,000	182,000	133,000	45,000
12,200	14,000	182,000	133,000	45,000
12,300	14,000	182,000	133,000	45,000
12,400	14,000	182,000	133,000	45,000
12,500	14,000	182,000	133,000	45,000
12,600	14,000	182,000	133,000	45,000
12,700	14,000	182,000	133,000	45,000
12,800	14,000	182,000	133,000	45,000
12,900	14,000	182,000	133,000	45,000
13,000	14,000	182,000	133,000	45,000
13,100	14,000	182,000	133,000	45,000
13,490	14,000	182,000	133,000	45,000
13,500	14,000	182,000	133,000	45,000
13,700	14,000	182,000	133,000	45,000

d1	d2	l1	l2	l3
mm	mm	mm	mm	mm
13,890	14,000	182,000	133,000	45,000
14,000	14,000	182,000	133,000	45,000
14,100	16,000	204,000	152,000	48,000
14,200	16,000	204,000	152,000	48,000
14,290	16,000	204,000	152,000	48,000
14,300	16,000	204,000	152,000	48,000
14,500	16,000	204,000	152,000	48,000
14,700	16,000	204,000	152,000	48,000
14,800	16,000	204,000	152,000	48,000
15,000	16,000	204,000	152,000	48,000
15,100	16,000	204,000	152,000	48,000
15,300	16,000	204,000	152,000	48,000
15,480	16,000	204,000	152,000	48,000
15,500	16,000	204,000	152,000	48,000
15,700	16,000	204,000	152,000	48,000
15,800	16,000	204,000	152,000	48,000
15,870	16,000	204,000	152,000	48,000
16,000	16,000	204,000	152,000	48,000
16,300	18,000	223,000	171,000	48,000
16,500	18,000	223,000	171,000	48,000
16,700	18,000	223,000	171,000	48,000
16,900	18,000	223,000	171,000	48,000
17,000	18,000	223,000	171,000	48,000
17,500	18,000	223,000	171,000	48,000
17,700	18,000	223,000	171,000	48,000
18,000	18,000	223,000	171,000	48,000
18,500	20,000	244,000	190,000	50,000
18,900	20,000	244,000	190,000	50,000
19,000	20,000	244,000	190,000	50,000
19,050	20,000	244,000	190,000	50,000
19,500	20,000	244,000	190,000	50,000
19,800	20,000	244,000	190,000	50,000
20,000	20,000	244,000	190,000	50,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51756

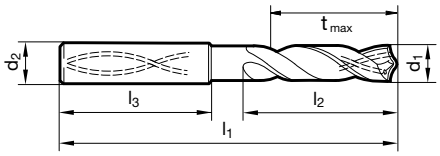
SuperV-S | 7xD | WN | VHM | TiAl-SiN | 140° | m7 | R | HA

P	M	K	N	S	H
●				●	○

Arbeitsrichtwerte Seite 174

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	70,000	30,000	36,000
3,250	6,000	70,000	30,000	36,000
3,300	6,000	70,000	30,000	36,000
3,400	6,000	75,000	35,500	36,000
3,500	6,000	75,000	35,500	36,000
3,700	6,000	75,000	35,500	36,000
4,000	6,000	75,000	37,500	36,000
4,200	6,000	75,000	37,500	36,000
4,300	6,000	85,000	45,000	36,000
4,500	6,000	85,000	45,000	36,000
4,650	6,000	85,000	45,000	36,000
5,000	6,000	90,000	50,000	36,000
5,100	6,000	90,000	50,000	36,000
5,200	6,000	90,000	50,000	36,000
5,500	6,000	97,000	57,000	36,000
5,550	6,000	97,000	57,000	36,000
6,000	6,000	97,000	57,000	36,000
6,500	8,000	106,000	66,000	36,000
6,750	8,000	106,000	66,000	36,000
6,800	8,000	106,000	66,000	36,000
6,900	8,000	116,000	76,000	36,000
7,000	8,000	116,000	76,000	36,000
7,400	8,000	116,000	76,000	36,000
7,500	8,000	116,000	76,000	36,000
7,800	8,000	116,000	76,000	36,000
8,000	8,000	116,000	76,000	36,000
8,500	10,000	131,000	87,000	40,000
8,600	10,000	131,000	87,000	40,000
8,800	10,000	131,000	87,000	40,000
9,000	10,000	131,000	87,000	40,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
9,250	10,000	139,000	95,000	40,000
9,400	10,000	139,000	95,000	40,000
9,500	10,000	139,000	95,000	40,000
10,000	10,000	139,000	95,000	40,000
10,200	12,000	155,000	106,000	45,000
10,400	12,000	155,000	106,000	45,000
10,500	12,000	155,000	106,000	45,000
10,800	12,000	155,000	106,000	45,000
11,000	12,000	155,000	106,000	45,000
11,300	12,000	163,000	114,000	45,000
11,400	12,000	163,000	114,000	45,000
11,500	12,000	163,000	114,000	45,000
12,000	12,000	163,000	114,000	45,000
12,500	14,000	182,000	133,000	45,000
13,000	14,000	182,000	133,000	45,000
13,100	14,000	182,000	133,000	45,000
13,500	14,000	182,000	133,000	45,000
14,000	14,000	182,000	133,000	45,000
14,500	16,000	204,000	152,000	48,000
15,000	16,000	204,000	152,000	48,000
15,100	16,000	204,000	152,000	48,000
15,500	16,000	204,000	152,000	48,000
16,000	16,000	204,000	152,000	48,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51764

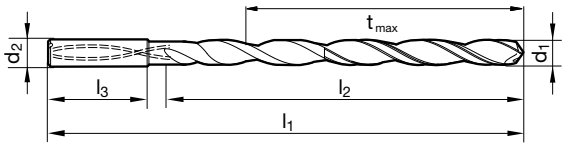
SuperV-T | 15xD | WN | VHM | AlTiN | 135° | h7 | R | HA

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 176

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittelempfehlungen“)

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	95,000	55,000	36,000
3,100	6,000	106,000	66,000	36,000
3,170	6,000	106,000	66,000	36,000
3,200	6,000	106,000	66,000	36,000
3,300	6,000	106,000	66,000	36,000
3,500	6,000	116,000	76,000	36,000
3,570	6,000	116,000	76,000	36,000
3,700	6,000	116,000	76,000	36,000
3,800	6,000	116,000	76,000	36,000
3,970	6,000	116,000	76,000	36,000
4,000	6,000	116,000	76,000	36,000
4,200	6,000	133,000	93,000	36,000
4,300	6,000	133,000	93,000	36,000
4,370	6,000	133,000	93,000	36,000
4,500	6,000	133,000	93,000	36,000
4,600	6,000	133,000	93,000	36,000
4,760	6,000	133,000	93,000	36,000
4,800	6,000	133,000	93,000	36,000
5,000	6,000	133,000	93,000	36,000
5,100	6,000	150,000	110,000	36,000
5,160	6,000	150,000	110,000	36,000
5,410	6,000	150,000	110,000	36,000
5,500	6,000	150,000	110,000	36,000
5,560	6,000	150,000	110,000	36,000
5,800	6,000	150,000	110,000	36,000
5,950	6,000	150,000	110,000	36,000
6,000	6,000	150,000	110,000	36,000
6,300	8,000	167,000	127,000	36,000
6,350	8,000	167,000	127,000	36,000
6,500	8,000	167,000	127,000	36,000
6,750	8,000	167,000	127,000	36,000
6,800	8,000	167,000	127,000	36,000
7,000	8,000	167,000	127,000	36,000
7,140	8,000	183,000	143,000	36,000
7,500	8,000	183,000	143,000	36,000
7,540	8,000	183,000	143,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
7,800	8,000	183,000	143,000	36,000
7,940	8,000	183,000	143,000	36,000
8,000	8,000	183,000	143,000	36,000
8,330	10,000	204,000	160,000	40,000
8,500	10,000	204,000	160,000	40,000
8,730	10,000	204,000	160,000	40,000
8,800	10,000	204,000	160,000	40,000
9,000	10,000	204,000	160,000	40,000
9,130	10,000	221,000	177,000	40,000
9,520	10,000	221,000	177,000	40,000
9,800	10,000	221,000	177,000	40,000
9,920	10,000	221,000	177,000	40,000
10,000	10,000	221,000	177,000	40,000
10,320	12,000	247,000	198,000	45,000
10,500	12,000	247,000	198,000	45,000
10,720	12,000	247,000	198,000	45,000
11,000	12,000	247,000	198,000	45,000
11,110	12,000	263,000	214,000	45,000
11,510	12,000	263,000	214,000	45,000
11,800	12,000	263,000	214,000	45,000
11,910	12,000	263,000	214,000	45,000
12,000	12,000	263,000	214,000	45,000
12,300	14,000	297,000	248,000	45,000
12,500	14,000	297,000	248,000	45,000
12,700	14,000	297,000	248,000	45,000
13,000	14,000	297,000	248,000	45,000
13,100	14,000	297,000	248,000	45,000
13,490	14,000	297,000	248,000	45,000
13,890	14,000	297,000	248,000	45,000
14,000	14,000	297,000	248,000	45,000
14,290	16,000	333,000	281,000	48,000
15,000	16,000	333,000	281,000	48,000
15,870	16,000	333,000	281,000	48,000
16,000	16,000	333,000	281,000	48,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51765

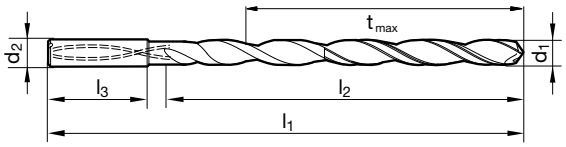
SuperV-T | 20xD | WN | VHM | AlTiN | 135° | h7 | R | HA

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 176

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittelempfehlungen“)

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	110,000	70,000	36,000
3,100	6,000	123,000	83,000	36,000
3,200	6,000	123,000	83,000	36,000
3,300	6,000	123,000	83,000	36,000
3,500	6,000	136,000	96,000	36,000
3,570	6,000	136,000	96,000	36,000
3,700	6,000	136,000	96,000	36,000
3,800	6,000	136,000	96,000	36,000
3,970	6,000	136,000	96,000	36,000
4,000	6,000	136,000	96,000	36,000
4,200	6,000	158,000	118,000	36,000
4,300	6,000	158,000	118,000	36,000
4,370	6,000	158,000	118,000	36,000
4,500	6,000	158,000	118,000	36,000
4,600	6,000	158,000	118,000	36,000
4,760	6,000	158,000	118,000	36,000
4,800	6,000	158,000	118,000	36,000
5,000	6,000	158,000	118,000	36,000
5,100	6,000	180,000	140,000	36,000
5,160	6,000	180,000	140,000	36,000
5,410	6,000	180,000	140,000	36,000
5,500	6,000	180,000	140,000	36,000
5,560	6,000	180,000	140,000	36,000
5,800	6,000	180,000	140,000	36,000
5,950	6,000	180,000	140,000	36,000
6,000	6,000	180,000	140,000	36,000
6,350	8,000	202,000	162,000	36,000
6,500	8,000	202,000	162,000	36,000
6,750	8,000	202,000	162,000	36,000
6,800	8,000	202,000	162,000	36,000
7,000	8,000	202,000	162,000	36,000
7,140	8,000	223,000	183,000	36,000
7,500	8,000	223,000	183,000	36,000
7,540	8,000	223,000	183,000	36,000
7,800	8,000	223,000	183,000	36,000
7,940	8,000	223,000	183,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
8,000	8,000	223,000	183,000	36,000
8,330	10,000	249,000	205,000	40,000
8,500	10,000	249,000	205,000	40,000
8,730	10,000	249,000	205,000	40,000
8,800	10,000	249,000	205,000	40,000
9,000	10,000	249,000	205,000	40,000
9,130	10,000	271,000	227,000	40,000
9,520	10,000	271,000	227,000	40,000
10,000	10,000	271,000	227,000	40,000
10,200	12,000	302,000	253,000	45,000
10,320	12,000	302,000	253,000	45,000
10,500	12,000	302,000	253,000	45,000
10,720	12,000	302,000	253,000	45,000
11,000	12,000	302,000	253,000	45,000
11,110	12,000	323,000	274,000	45,000
11,510	12,000	323,000	274,000	45,000
11,800	12,000	323,000	274,000	45,000
11,910	12,000	323,000	274,000	45,000
12,000	12,000	323,000	274,000	45,000
12,500	14,000	367,000	318,000	45,000
12,700	14,000	367,000	318,000	45,000
13,000	14,000	367,000	318,000	45,000
13,490	14,000	367,000	318,000	45,000
14,000	14,000	367,000	318,000	45,000
14,290	16,000	413,000	361,000	48,000
15,000	16,000	413,000	361,000	48,000
15,870	16,000	413,000	361,000	48,000
16,000	16,000	413,000	361,000	48,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51766

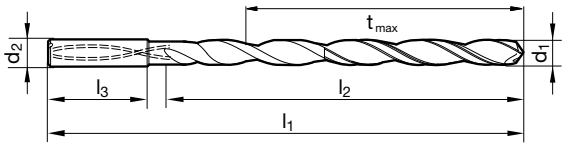
SuperV-T | 25xD | WN | VHM | AlTiN | 135° | h7 | R | HA

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 176

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittelempfehlungen“)

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	125,000	85,000	36,000
3,100	6,000	141,000	101,000	36,000
3,200	6,000	141,000	101,000	36,000
3,300	6,000	141,000	101,000	36,000
3,500	6,000	156,000	116,000	36,000
3,570	6,000	156,000	116,000	36,000
3,700	6,000	156,000	116,000	36,000
3,800	6,000	156,000	116,000	36,000
3,970	6,000	156,000	116,000	36,000
4,000	6,000	156,000	116,000	36,000
4,200	6,000	183,000	143,000	36,000
4,300	6,000	183,000	143,000	36,000
4,370	6,000	183,000	143,000	36,000
4,500	6,000	183,000	143,000	36,000
4,600	6,000	183,000	143,000	36,000
4,760	6,000	183,000	143,000	36,000
4,800	6,000	183,000	143,000	36,000
5,000	6,000	183,000	143,000	36,000
5,100	6,000	210,000	170,000	36,000
5,160	6,000	210,000	170,000	36,000
5,410	6,000	210,000	170,000	36,000
5,500	6,000	210,000	170,000	36,000
5,560	6,000	210,000	170,000	36,000
5,800	6,000	210,000	170,000	36,000
5,950	6,000	210,000	170,000	36,000
6,000	6,000	210,000	170,000	36,000
6,300	8,000	237,000	197,000	36,000
6,350	8,000	237,000	197,000	36,000
6,500	8,000	237,000	197,000	36,000
6,750	8,000	237,000	197,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,800	8,000	237,000	197,000	36,000
7,000	8,000	237,000	197,000	36,000
7,140	8,000	263,000	223,000	36,000
7,500	8,000	263,000	223,000	36,000
7,540	8,000	263,000	223,000	36,000
7,940	8,000	263,000	223,000	36,000
8,000	8,000	263,000	223,000	36,000
8,330	10,000	294,000	250,000	40,000
8,500	10,000	294,000	250,000	40,000
8,730	10,000	294,000	250,000	40,000
8,800	10,000	294,000	250,000	40,000
9,000	10,000	294,000	250,000	40,000
9,130	10,000	321,000	277,000	40,000
9,520	10,000	321,000	277,000	40,000
10,000	10,000	321,000	277,000	40,000
10,720	12,000	359,000	310,000	45,000
11,000	12,000	359,000	310,000	45,000
11,110	12,000	386,000	337,000	45,000
12,000	12,000	386,000	337,000	45,000
12,300	14,000	437,000	388,000	45,000
12,700	14,000	437,000	388,000	45,000
13,000	14,000	437,000	388,000	45,000
13,100	14,000	437,000	388,000	45,000
13,490	14,000	437,000	388,000	45,000
13,890	14,000	437,000	388,000	45,000
14,000	14,000	437,000	388,000	45,000
14,290	16,000	493,000	441,000	48,000
15,000	16,000	493,000	441,000	48,000
15,870	16,000	493,000	441,000	48,000
16,000	16,000	493,000	441,000	48,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

Katalog-Nr. 51767

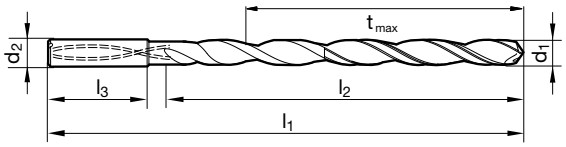
SuperV-T | 30xD | WN | VHM | AlTiN | 135° | h7 | R | HA

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 176

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittelempfehlungen“)

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	140,000	100,000	36,000
3,100	6,000	158,000	118,000	36,000
3,200	6,000	158,000	118,000	36,000
3,300	6,000	158,000	118,000	36,000
3,500	6,000	176,000	136,000	36,000
3,570	6,000	176,000	136,000	36,000
3,700	6,000	176,000	136,000	36,000
3,800	6,000	176,000	136,000	36,000
3,970	6,000	176,000	136,000	36,000
4,000	6,000	176,000	136,000	36,000
4,200	6,000	208,000	168,000	36,000
4,370	6,000	208,000	168,000	36,000
4,500	6,000	208,000	168,000	36,000
4,760	6,000	208,000	168,000	36,000
5,000	6,000	208,000	168,000	36,000
5,100	6,000	240,000	200,000	36,000
5,160	6,000	240,000	200,000	36,000
5,410	6,000	240,000	200,000	36,000
5,500	6,000	240,000	200,000	36,000
5,560	6,000	240,000	200,000	36,000
5,950	6,000	240,000	200,000	36,000
6,000	6,000	240,000	200,000	36,000
6,300	8,000	272,000	232,000	36,000
6,350	8,000	272,000	232,000	36,000
6,500	8,000	272,000	232,000	36,000
6,750	8,000	272,000	232,000	36,000
6,800	8,000	272,000	232,000	36,000
7,000	8,000	272,000	232,000	36,000
7,140	8,000	303,000	263,000	36,000
7,500	8,000	303,000	263,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
7,540	8,000	303,000	263,000	36,000
7,940	8,000	303,000	263,000	36,000
8,000	8,000	303,000	263,000	36,000
8,330	10,000	339,000	295,000	40,000
8,500	10,000	339,000	295,000	40,000
8,730	10,000	339,000	295,000	40,000
8,800	10,000	339,000	295,000	40,000
9,000	10,000	339,000	295,000	40,000
9,130	10,000	371,000	327,000	40,000
9,520	10,000	371,000	327,000	40,000
10,000	10,000	371,000	327,000	40,000
10,320	12,000	412,000	363,000	45,000
10,720	12,000	412,000	363,000	45,000
11,000	12,000	412,000	363,000	45,000
11,110	12,000	443,000	394,000	45,000
11,510	12,000	443,000	394,000	45,000
11,910	12,000	443,000	394,000	45,000
12,000	12,000	443,000	394,000	45,000
12,300	14,000	507,000	458,000	45,000
12,700	14,000	507,000	458,000	45,000
13,000	14,000	507,000	458,000	45,000
13,100	14,000	507,000	458,000	45,000
13,490	14,000	507,000	458,000	45,000
13,890	14,000	507,000	458,000	45,000
14,000	14,000	507,000	458,000	45,000

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

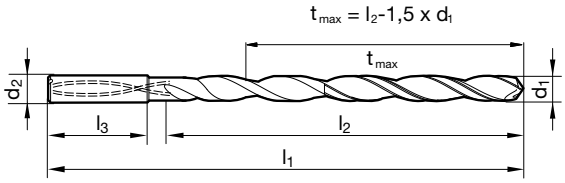
Katalog-Nr. 51768

SuperV-T | 40xD | WN | VHM | AlTiN | 135° | h7 | R | HA

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 176

- Ausspitzung ≥ Ø 3,000
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittelempfehlungen“)



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	170,000	130,000	36,000
3,100	6,000	193,000	153,000	36,000
3,170	6,000	193,000	153,000	36,000
3,200	6,000	193,000	153,000	36,000
3,300	6,000	193,000	153,000	36,000
3,500	6,000	193,000	153,000	36,000
3,800	6,000	216,000	176,000	36,000
3,970	6,000	216,000	176,000	36,000
4,000	6,000	216,000	176,000	36,000
4,200	6,000	238,000	198,000	36,000
4,500	6,000	238,000	198,000	36,000
4,760	6,000	258,000	218,000	36,000
5,000	6,000	258,000	218,000	36,000
5,100	6,000	280,000	240,000	36,000
5,500	6,000	280,000	240,000	36,000
5,560	6,000	300,000	260,000	36,000
6,000	6,000	300,000	260,000	36,000
6,300	8,000	322,000	282,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
6,350	8,000	322,000	282,000	36,000
6,500	8,000	322,000	282,000	36,000
6,800	8,000	342,000	302,000	36,000
7,000	8,000	342,000	302,000	36,000
7,140	8,000	363,000	323,000	36,000
7,500	8,000	363,000	323,000	36,000
8,000	8,000	383,000	343,000	36,000
8,500	10,000	409,000	365,000	40,000
9,000	10,000	429,000	386,000	40,000
10,000	10,000	471,000	427,000	40,000

Hartmetall-Spiralbohrer

Spiralbohrer kurz

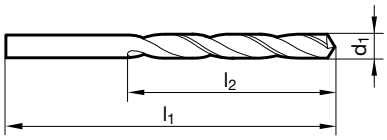
Katalog-Nr. 51290

N | WN | VHM | TiAlN nano | 118° | h7 | R | Cyl

P	M	K	N	S	H
○	○	○	●	○	

Arbeitsrichtwerte Seite 178

- Flächenanschliff
- Hauptschneidenform gerade
- höhere Verschleißfestigkeit
- Bau- und Einsatzstähle
- Automatenstähle, Vergütungsstähle
- Gusswerkstoffe
- Messing
- Al mit hohem Si-Gehalt
- Magnesium und Mg-Legierungen
- Kunststoffe und faserverstärkte Kunststoffe



d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000
1,100		36,000	14,000
1,200		38,000	16,000
1,300		38,000	16,000
1,400		40,000	18,000
1,500		40,000	18,000
1,600		43,000	20,000
1,700		43,000	20,000
1,800		46,000	22,000
1,900		46,000	22,000
2,000		49,000	24,000
2,100		49,000	24,000
2,200		53,000	27,000
2,300		53,000	27,000
2,400		57,000	30,000
2,500		57,000	30,000
2,600		57,000	30,000
2,700		61,000	33,000
2,800		61,000	33,000
2,900		61,000	33,000
3,000		61,000	33,000
3,100		65,000	36,000
3,200		65,000	36,000
3,300		65,000	36,000
3,400		70,000	39,000
3,500		70,000	39,000
3,600		70,000	39,000
3,700		70,000	39,000
3,800		75,000	43,000
3,900		75,000	43,000
4,000		75,000	43,000
4,100		75,000	43,000
4,200		75,000	43,000
4,300		80,000	47,000
4,400		80,000	47,000
4,500		80,000	47,000
4,600		80,000	47,000
4,700		80,000	47,000
4,800		86,000	52,000
4,900		86,000	52,000
5,000		86,000	52,000
5,100		86,000	52,000
5,200		86,000	52,000
5,300		86,000	52,000
5,400		93,000	57,000
5,500		93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000

d1 mm	inch	l1 mm	l2 mm
5,800		93,000	57,000
5,900		93,000	57,000
6,000		93,000	57,000
6,100		101,000	63,000
6,200		101,000	63,000
6,300		101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,600		101,000	63,000
6,700		101,000	63,000
6,800		109,000	69,000
6,900		109,000	69,000
7,000		109,000	69,000
7,100		109,000	69,000
7,200		109,000	69,000
7,300		109,000	69,000
7,400		109,000	69,000
7,500		109,000	69,000
7,600		117,000	75,000
7,700		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,500		133,000	87,000
11,000		142,000	94,000
11,500		142,000	94,000
12,000		151,000	101,000

Spiralbohrer mit Zylinderschaft

Spiralbohrer mit verst. Zylinderschaft

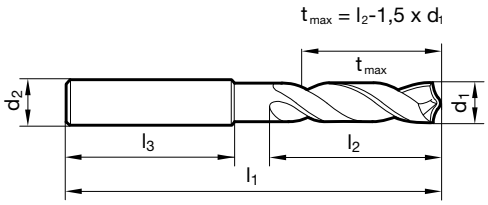
Katalog-Nr. 51146

H	~3xD	DIN 6537 K	VHM	AlTiN	120°	m7	R	HA

P	M	K	N	S	H
○		○			●

Arbeitsrichtwerte Seite 178

- Hauptschneidenform gerade (durch Korrektur)
- Flächenanschliff



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
2,600	6,000	62,000	20,000	36,000
3,000	6,000	62,000	20,000	36,000
3,400	6,000	62,000	20,000	36,000
4,000	6,000	66,000	24,000	36,000
4,300	6,000	66,000	24,000	36,000
5,000	6,000	66,000	28,000	36,000
5,100	6,000	66,000	28,000	36,000
5,600	6,000	66,000	28,000	36,000
6,000	6,000	66,000	28,000	36,000
6,900	8,000	79,000	34,000	36,000
7,100	8,000	79,000	41,000	36,000
8,000	8,000	79,000	41,000	36,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
8,600	10,000	89,000	47,000	40,000
9,100	10,000	89,000	47,000	40,000
10,000	10,000	89,000	47,000	40,000
10,400	12,000	102,000	55,000	45,000
10,600	12,000	102,000	55,000	45,000
11,100	12,000	102,000	55,000	45,000
12,000	12,000	102,000	55,000	45,000
14,100	16,000	115,000	65,000	48,000

Einlippenbohrer

Einlippenbohrer SuperT-NXL

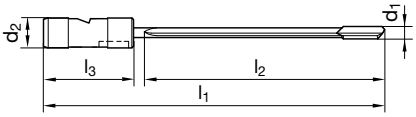
Katalog-Nr. 65030

SuperT-NXL | WN | HM | TiN | h5 | R | TBM-SEH

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 180

- fixe Gesamtlänge 800 mm
- Umfangsform G
- blanke Spanfläche für bessere Spanbildung
- universell einsetzbar
- nur auf Tiefbohrmaschinen verwendbar



d1 **mm**	d2 mm	l1 mm	l2 mm	l3 mm	Code-Nr.
5,000	25,000	800,000	700,000	70,000	5,000
6,000	25,000	800,000	700,000	70,000	6,000
7,000	25,000	800,000	700,000	70,000	7,000
8,000	25,000	800,000	700,000	70,000	8,000
9,000	25,000	800,000	700,000	70,000	9,000
10,000	25,000	800,000	700,000	70,000	10,000
11,500	25,000	800,000	700,000	70,000	11,500
12,000	25,000	800,000	700,000	70,000	12,000
15,000	25,000	800,000	700,000	70,000	15,000
16,000	25,000	800,000	700,000	70,000	16,000
18,000	25,000	800,000	700,000	70,000	18,000
19,000	25,000	800,000	700,000	70,000	19,000
20,000	25,000	800,000	700,000	70,000	20,000
21,000	25,000	800,000	700,000	70,000	21,000
22,000	25,000	800,000	700,000	70,000	22,000
25,000	25,000	800,000	700,000	70,000	25,000

Einlippenbohrer

Einlippenbohrer SuperT-NXL

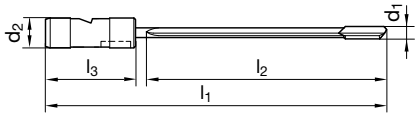
Katalog-Nr. 65031

SuperT-NXL | WN | HM | TiN | h5 | R | TBM-SEH

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 180

- fixe Gesamtlänge 1200 mm
- Umfangsform G
- blanke Spanfläche für bessere Spanbildung
- universell einsetzbar
- nur auf Tiefbohrmaschinen verwendbar



d1 **mm**	d2 mm	l1 mm	l2 mm	l3 mm	Code-Nr.
5,000	25,000	1200,000	1100,000	70,000	5,000
6,000	25,000	1200,000	1100,000	70,000	6,000
7,000	25,000	1200,000	1100,000	70,000	7,000
8,000	25,000	1200,000	1100,000	70,000	8,000
9,000	25,000	1200,000	1100,000	70,000	9,000
10,000	25,000	1200,000	1100,000	70,000	10,000
11,500	25,000	1200,000	1100,000	70,000	11,500
12,000	25,000	1200,000	1100,000	70,000	12,000
15,000	25,000	1200,000	1100,000	70,000	15,000
16,000	25,000	1200,000	1100,000	70,000	16,000
18,000	25,000	1200,000	1100,000	70,000	18,000
19,000	25,000	1200,000	1100,000	70,000	19,000
20,000	25,000	1200,000	1100,000	70,000	20,000
22,000	25,000	1200,000	1100,000	70,000	22,000

Einlippenbohrer

Einlippenbohrer SuperT-NXL

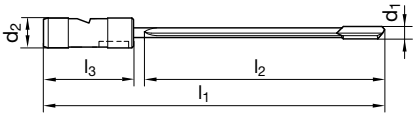
Katalog-Nr. 65032

SuperT-NXL | WN | HM | TiN | h5 | R | TBM-SEH

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 180

- fixe Gesamtlänge 1600 mm
- Umfangsform G
- blanke Spanfläche für bessere Spanbildung
- universell einsetzbar
- nur auf Tiefbohrmaschinen verwendbar



d1 **mm**	d2 mm	l1 mm	l2 mm	l3 mm	Code-Nr.
4,000	25,000	1600,000	1500,000	70,000	4,000
5,000	25,000	1600,000	1500,000	70,000	5,000
5,500	25,000	1600,000	1500,000	70,000	5,500
6,000	25,000	1600,000	1500,000	70,000	6,000
6,500	25,000	1600,000	1500,000	70,000	6,500
7,000	25,000	1600,000	1500,000	70,000	7,000
7,500	25,000	1600,000	1500,000	70,000	7,500
8,000	25,000	1600,000	1500,000	70,000	8,000
9,000	25,000	1600,000	1500,000	70,000	9,000
9,500	25,000	1600,000	1500,000	70,000	9,500
10,000	25,000	1600,000	1500,000	70,000	10,000
11,000	25,000	1600,000	1500,000	70,000	11,000
11,500	25,000	1600,000	1500,000	70,000	11,500
12,000	25,000	1600,000	1500,000	70,000	12,000
13,000	25,000	1600,000	1500,000	70,000	13,000
14,000	25,000	1600,000	1500,000	70,000	14,000
15,000	25,000	1600,000	1500,000	70,000	15,000
16,000	25,000	1600,000	1500,000	70,000	16,000
17,000	25,000	1600,000	1500,000	70,000	17,000
18,000	25,000	1600,000	1500,000	70,000	18,000
19,000	25,000	1600,000	1500,000	70,000	19,000
20,000	25,000	1600,000	1500,000	70,000	20,000
22,000	25,000	1600,000	1500,000	70,000	22,000

Einlippenbohrer

Einlippenbohrer SuperT-NXL

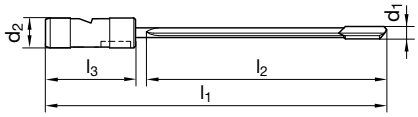
Katalog-Nr. 65033

SuperT-NXL | WN | HM | TiN | h5 | R | TBM-SEH

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 180

- fixe Gesamtlänge 2000 mm
- Umfangsform G
- blanke Spanfläche für bessere Spanbildung
- universell einsetzbar
- nur auf Tiefbohrmaschinen verwendbar



d1 **mm**	d2 mm	l1 mm	l2 mm	l3 mm	Code-Nr.
5,000	25,000	2000,000	1900,000	70,000	5,000
6,000	25,000	2000,000	1900,000	70,000	6,000
7,000	25,000	2000,000	1900,000	70,000	7,000
8,000	25,000	2000,000	1900,000	70,000	8,000
9,000	25,000	2000,000	1900,000	70,000	9,000
10,000	25,000	2000,000	1900,000	70,000	10,000
11,500	25,000	2000,000	1900,000	70,000	11,500
12,000	25,000	2000,000	1900,000	70,000	12,000
15,000	25,000	2000,000	1900,000	70,000	15,000
16,000	25,000	2000,000	1900,000	70,000	16,000
18,000	25,000	2000,000	1900,000	70,000	18,000
19,000	25,000	2000,000	1900,000	70,000	19,000
20,000	25,000	2000,000	1900,000	70,000	20,000
22,000	25,000	2000,000	1900,000	70,000	22,000

Spiralbohrer mit Zylinderschaft

Spiralbohrer extra kurz

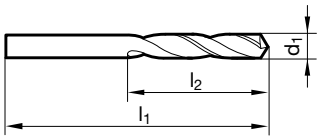
Katalog-Nr. 61131

V18 | ~3xD | DIN 1897 | HSS-Co | AlTi-ZrN | 130° | h8 | R | Cyl

P	M	K	N	S	H
○	●	○	○	●	

Arbeitsrichtwerte Seite 178

- Ausspitzung ≥ Ø 1,000
- Kegelmantelanschliff
- weite Spannuten
- besonders hohe Verschleißfestigkeit
- besonders hohe Stabilität



d1 mm	inch	l1 mm	l2 mm
1,000		26,000	6,000
1,100		28,000	7,000
1,200		30,000	8,000
1,300		30,000	8,000
1,400		32,000	9,000
1,500		32,000	9,000
1,600		34,000	10,000
1,700		34,000	10,000
1,800		36,000	11,000
1,900		36,000	11,000
2,000		38,000	12,000
2,100		38,000	12,000
2,200		40,000	13,000
2,300		40,000	13,000
2,400		43,000	14,000
2,500		43,000	14,000
2,600		43,000	14,000
2,700		46,000	16,000
2,800		46,000	16,000
2,900		46,000	16,000
3,000		46,000	16,000
3,100		49,000	18,000
3,200		49,000	18,000
3,300		49,000	18,000
3,400		52,000	20,000
3,500		52,000	20,000
3,600		52,000	20,000
3,700		52,000	20,000
3,800		55,000	22,000
3,900		55,000	22,000
4,000		55,000	22,000
4,100		55,000	22,000
4,200		55,000	22,000
4,300		58,000	24,000
4,400		58,000	24,000
4,500		58,000	24,000
4,600		58,000	24,000
4,700		58,000	24,000
4,800		62,000	26,000
4,900		62,000	26,000
5,000		62,000	26,000
5,100		62,000	26,000
5,200		62,000	26,000
5,300		62,000	26,000
5,400		66,000	28,000
5,500		66,000	28,000
5,600		66,000	28,000
5,700		66,000	28,000

d1 mm	inch	l1 mm	l2 mm
5,800		66,000	28,000
5,900		66,000	28,000
6,000		66,000	28,000
6,100		70,000	31,000
6,200		70,000	31,000
6,300		70,000	31,000
6,400		70,000	31,000
6,500		70,000	31,000
6,600		70,000	31,000
6,700		70,000	31,000
6,800		74,000	34,000
6,900		74,000	34,000
7,000		74,000	34,000
7,100		74,000	34,000
7,200		74,000	34,000
7,300		74,000	34,000
7,400		74,000	34,000
7,500		74,000	34,000
7,600		79,000	37,000
7,700		79,000	37,000
7,800		79,000	37,000
7,900		79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,200		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
10,000		89,000	43,000
10,200		89,000	43,000
10,500		89,000	43,000
11,000		95,000	47,000
11,200		95,000	47,000
11,500		95,000	47,000

d1 mm	inch	l1 mm	l2 mm
11,800		95,000	47,000
12,000		102,000	51,000
12,500		102,000	51,000
13,000		102,000	51,000

d1 mm	inch	l1 mm	l2 mm

Spiralbohrer mit Zylinderschaft

Spiralbohrer kurz

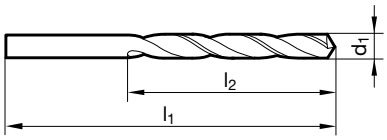
Katalog-Nr. 61232

V18 | ~5xD | DIN 338 | HSS-Co | AlTi-ZrN | 130° | h8 | R | Cyl

P	M	K	N	S	H
○	●	○	○	●	

Arbeitsrichtwerte Seite 178

- Ausspitzung ≥ Ø 1,000
- Kegelmantelanschliff
- weite Spannuten
- besonders hohe Stabilität
- besonders hohe Verschleißfestigkeit



d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000
1,100		36,000	14,000
1,200		38,000	16,000
1,300		38,000	16,000
1,400		40,000	18,000
1,500		40,000	18,000
1,600		43,000	20,000
1,700		43,000	20,000
1,800		46,000	22,000
1,900		46,000	22,000
2,000		49,000	24,000
2,100		49,000	24,000
2,200		53,000	27,000
2,300		53,000	27,000
2,400		57,000	30,000
2,500		57,000	30,000
2,600		57,000	30,000
2,700		61,000	33,000
2,800		61,000	33,000
2,900		61,000	33,000
3,000		61,000	33,000
3,100		65,000	36,000
3,200		65,000	36,000
3,300		65,000	36,000
3,400		70,000	39,000
3,500		70,000	39,000
3,600		70,000	39,000
3,700		70,000	39,000
3,800		75,000	43,000
3,900		75,000	43,000
4,000		75,000	43,000
4,100		75,000	43,000
4,200		75,000	43,000
4,300		80,000	47,000
4,400		80,000	47,000
4,500		80,000	47,000
4,600		80,000	47,000
4,700		80,000	47,000
4,800		86,000	52,000
4,900		86,000	52,000
5,000		86,000	52,000
5,100		86,000	52,000
5,200		86,000	52,000
5,300		86,000	52,000
5,400		93,000	57,000
5,500		93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000

d1 mm	inch	l1 mm	l2 mm
5,800		93,000	57,000
5,900		93,000	57,000
6,000		93,000	57,000
6,100		101,000	63,000
6,200		101,000	63,000
6,300		101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,600		101,000	63,000
6,700		101,000	63,000
6,800		109,000	69,000
6,900		109,000	69,000
7,000		109,000	69,000
7,100		109,000	69,000
7,200		109,000	69,000
7,300		109,000	69,000
7,400		109,000	69,000
7,500		109,000	69,000
7,600		117,000	75,000
7,700		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,200		133,000	87,000
10,500		133,000	87,000
11,000		142,000	94,000
11,200		142,000	94,000
11,500		142,000	94,000

d1 **mm**	inch	l1 mm	l2 mm
11,800		142,000	94,000
12,000		151,000	101,000
12,500		151,000	101,000
13,000		151,000	101,000

d1 **mm**	inch	l1 mm	l2 mm

Spiralbohrer mit Zylinderschaft

V16-Spiralbohrer

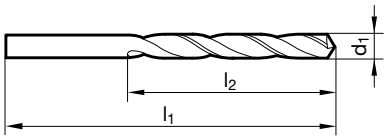
Katalog-Nr. 71018

V16 | ~5xD | DIN 338 | M42 | Bronze-VAP | 135° | h8 | R | Cyl

P	M	K	N	S	H
●	●	●	●	●	○

Arbeitsrichtwerte Seite 178

- Ausspitzung ≥ Ø 1,000
- optimierter Kreuzanschliff
- 8%-kobaltlegierter HSCO-Schnellarbeitsstahl für längere Werkzeuglebensdauer, höhere Warmhärte und Wärmefestigkeit
- für stationären und mobilen Einsatz
- unlegierte- und höherlegierte Stahlwerkstoffe
- Gusswerkstoffe
- NE-Metalle
- Titan und Titanlegierungen



d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000
1,100		36,000	14,000
1,200		38,000	16,000
1,300		38,000	16,000
1,400		40,000	18,000
1,500		40,000	18,000
1,590	1/16	43,000	20,000
1,600		43,000	20,000
1,700		43,000	20,000
1,800		46,000	22,000
1,900		46,000	22,000
1,980	5/64	49,000	24,000
2,000		49,000	24,000
2,100		49,000	24,000
2,200		53,000	27,000
2,300		53,000	27,000
2,380	3/32	57,000	30,000
2,400		57,000	30,000
2,500		57,000	30,000
2,600		57,000	30,000
2,700		61,000	33,000
2,780	7/64	61,000	33,000
2,800		61,000	33,000
2,900		61,000	33,000
3,000		61,000	33,000
3,100		65,000	36,000
3,170	1/8	65,000	36,000
3,200		65,000	36,000
3,250		65,000	36,000
3,300		65,000	36,000
3,400		70,000	39,000
3,500		70,000	39,000
3,570	9/64	70,000	39,000
3,600		70,000	39,000
3,700		70,000	39,000
3,800		75,000	43,000
3,900		75,000	43,000
3,970	5/32	75,000	43,000
4,000		75,000	43,000
4,100		75,000	43,000
4,200		75,000	43,000
4,300		80,000	47,000
4,400		80,000	47,000
4,500		80,000	47,000
4,600		80,000	47,000
4,700		80,000	47,000
4,760	3/16	86,000	52,000
4,800		86,000	52,000

d1 mm	inch	l1 mm	l2 mm
4,900		86,000	52,000
5,000		86,000	52,000
5,100		86,000	52,000
5,160	13/64	86,000	52,000
5,200		86,000	52,000
5,300		86,000	52,000
5,400		93,000	57,000
5,500		93,000	57,000
5,560	7/32	93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000
5,800		93,000	57,000
5,900		93,000	57,000
5,950	15/64	93,000	57,000
6,000		93,000	57,000
6,100		101,000	63,000
6,200		101,000	63,000
6,300		101,000	63,000
6,350	1/4	101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,600		101,000	63,000
6,700		101,000	63,000
6,800		109,000	69,000
6,900		109,000	69,000
7,000		109,000	69,000
7,100		109,000	69,000
7,140	9/32	109,000	69,000
7,200		109,000	69,000
7,300		109,000	69,000
7,400		109,000	69,000
7,500		109,000	69,000
7,540	19/64	117,000	75,000
7,600		117,000	75,000
7,700		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
7,940	5/16	117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,330	21/64	117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,730	11/32	125,000	81,000

d1 mm	inch	l1 mm	l2 mm
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,130	23/64	125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,500		125,000	81,000
9,520	3/8	133,000	87,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
9,920	25/64	133,000	87,000
10,000		133,000	87,000
10,100		133,000	87,000
10,200		133,000	87,000
10,300		133,000	87,000

d1 mm	inch	l1 mm	l2 mm
10,320	13/32	133,000	87,000
10,500		133,000	87,000
10,720	27/64	142,000	94,000
10,800		142,000	94,000
11,000		142,000	94,000
11,110	7/16	142,000	94,000
11,500		142,000	94,000
11,510	29/64	142,000	94,000
11,910	15/32	151,000	101,000
12,000		151,000	101,000
12,200		151,000	101,000
12,300	31/64	151,000	101,000
12,500		151,000	101,000
12,700	1/2	151,000	101,000
12,800		151,000	101,000
13,000		151,000	101,000

Spiralbohrer mit Zylinderschaft

V16-Spiralbohrer-Sätze

V16 | ~5xD | DIN 338 | M42 | Bronze-VAP | 135° | h8 | R | Cyl

P	M	K	N	S	H
●	●	●	●	●	○

Arbeitsrichtwerte Seite 178

- optimierter Kreuzanschliff
- 8%-kobaltlegierter HSCO-Schnellarbeitsstahl
- für stationären und mobilen Einsatz
- Für Monteure und Handwerker stehen Sätze mit den gebräuchlichsten Bohrerabmessungen zur Verfügung, die mit Kassetten geliefert werden können. Auf Wunsch sind andere Satz-Zusammenstellungen möglich.

Katalog-Nr. 71019

Code-Nr.	d1 mm	steigend um mm	Stück/Satz
0,013	1,0-10,0	0,5	19
0,014	1,0-13,0	0,5	25

Maschinen-Gewindebohrer

V16-Pocket-Satz (Spiralbohrer, Gewindebohrer und Senker)

N | WN | R | Cyl

- bestehend aus Gewindebohrer Katalog-Nr. 73046 (M3 / M4 / M5 / M6 / M8 / M10), Spiralbohrer Katalog-Nr. 71018 (Ø 2,5 / 3,3 / 4,2 / 5,0 / 6,8 / 8,5) und Kegelsenker 90° Katalog-Nr. 72346 (Ø 6,3 / 12,4)

Katalog-Nr. 71020

Code-Nr.	Stück/Satz
1,000	14

Spiralbohrer mit Zylinderschaft

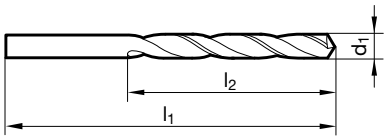
Stangenbohrer, Länge 6 inches

Katalog-Nr. 71140

N	NAS 907	HSS	blank	118°	h8	R	Cyl

P	M	K	N	S	H
●		●	●		

- Kegelmantelanschliff
- Bleche aus Al-Legierungen
- geschichtete Platten (Sandwich-Pakete)
- Stahl und Guss



d1 mm	inch	l1 mm	l2 mm
1,500		153,000	23,000
1,590	1/16	153,000	26,000
1,610		153,000	26,000
1,650		153,000	26,000
1,750		153,000	26,000
1,780		153,000	26,000
1,850		153,000	26,000
1,900		153,000	26,000
1,930		153,000	29,000
1,980	5/64	153,000	29,000
1,990		153,000	29,000
2,000		153,000	29,000
2,080		153,000	29,000
2,100		153,000	29,000
2,180		153,000	32,500
2,260		153,000	32,500
2,300		153,000	32,500
2,370		153,000	37,000
2,380	3/32	153,000	37,000
2,400		153,000	37,000
2,490		153,000	37,000
2,500		153,000	37,000
2,530		153,000	37,000
2,580		153,000	37,000
2,640		153,000	37,000
2,710		153,000	42,000
2,780	7/64	153,000	42,000
2,790		153,000	42,000
2,820		153,000	42,000
2,870		153,000	42,000
2,950		153,000	42,000
3,000		153,000	42,000
3,050		153,000	42,000
3,170	1/8	153,000	42,000
3,200		153,000	42,000
3,260		153,000	42,000
3,450		154,000	49,000
3,500		154,000	49,000
3,570	9/64	154,000	49,000
3,600		154,000	49,000
3,660		154,000	49,000
3,700		154,000	49,000
3,730		154,000	49,000
3,800		154,000	55,000
3,860		154,000	55,000
3,910		154,000	55,000
3,970	5/32	154,000	55,000
3,990		154,000	55,000
4,000		154,000	55,000
4,040		154,000	55,000
4,090		154,000	55,000
4,220		154,000	55,000
4,300		154,000	60,000
4,370	11/64	154,000	60,000
4,390		154,000	60,000
4,500		154,000	60,000
4,570		154,000	60,000
4,700		154,000	60,000
4,760	3/16	154,000	63,500
4,800		154,000	63,500
4,850		154,000	63,500
4,920		154,000	63,500
4,980		154,000	63,500
5,000		154,000	63,500
5,110		154,000	63,500
5,160	13/64	154,000	63,500
5,500		154,000	68,500
5,560	7/32	154,000	68,500
5,610		154,000	68,500
5,790		154,000	68,500
5,800		154,000	68,500
5,940		154,000	68,500
5,950	15/64	154,000	68,500
6,040		154,000	75,000
6,150		154,000	75,000
6,200		154,000	75,000
6,250		154,000	75,000
6,350	1/4	154,000	75,000
6,400		154,000	75,000
6,530		154,000	75,000
6,630		154,000	75,000
6,750	17/64	155,000	80,000
6,800		155,000	80,000
7,000		155,000	80,000
7,500		155,000	80,000
7,700		155,000	90,000
7,940	5/16	155,000	90,000
8,000		155,000	90,000
8,500		155,000	90,000

Spiralbohrer mit Zylinderschaft

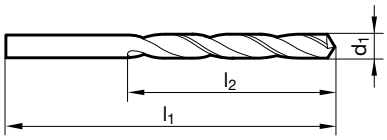
Stangenbohrer, Länge 6 inches

Katalog-Nr. 71142

N	NAS 907	HSS	ni-triert	135°	h8	R	Cyl

P	M	K	N	S	H
●		●	●		

- Kegelmantelanschliff
- Bleche aus Al-Legierungen
- geschichtete Platten (Sandwich-Pakete)
- Stahl und Guss



d1 mm	inch	l1 mm	l2 mm
1,500		153,000	23,000
1,590	1/16	153,000	26,000
1,700		153,000	26,000
1,750		153,000	26,000
1,780		153,000	26,000
1,900		153,000	26,000
1,980	5/64	153,000	29,000
2,000		153,000	29,000
2,300		153,000	32,500
2,380	3/32	153,000	37,000
2,400		153,000	37,000
2,490		153,000	37,000
2,500		153,000	37,000
2,530		153,000	37,000
2,580		153,000	37,000
2,640		153,000	37,000
2,710		153,000	42,000
2,780	7/64	153,000	42,000
2,790		153,000	42,000
2,820		153,000	42,000
2,870		153,000	42,000
2,950		153,000	42,000
3,000		153,000	42,000
3,050		153,000	42,000
3,170	1/8	153,000	42,000
3,200		153,000	42,000
3,260		153,000	42,000
3,450		154,000	49,000
3,500		154,000	49,000
3,570	9/64	154,000	49,000
3,600		154,000	49,000
3,660		154,000	49,000
3,700		154,000	49,000
3,800		154,000	55,000
3,970	5/32	154,000	55,000
3,990		154,000	55,000
4,000		154,000	55,000
4,040		154,000	55,000
4,090		154,000	55,000
4,220		154,000	55,000
4,300		154,000	60,000
4,370	11/64	154,000	60,000

d1 mm	inch	l1 mm	l2 mm
4,390		154,000	60,000
4,500		154,000	60,000
4,570		154,000	60,000
4,620		154,000	60,000
4,700		154,000	60,000
4,760	3/16	154,000	63,500
4,800		154,000	63,500
4,850		154,000	63,500
4,920		154,000	63,500
4,980		154,000	63,500
5,000		154,000	63,500
5,060		154,000	63,500
5,110		154,000	63,500
5,160	13/64	154,000	63,500
5,410		154,000	68,500
5,500		154,000	68,500
5,560	7/32	154,000	68,500
5,610		154,000	68,500
5,790		154,000	68,500
5,800		154,000	68,500
5,940		154,000	68,500
5,950	15/64	154,000	68,500
6,040		154,000	75,000
6,150		154,000	75,000
6,200		154,000	75,000
6,250		154,000	75,000
6,350	1/4	154,000	75,000
6,450		154,000	75,000
6,530		154,000	75,000
6,750	17/64	155,000	80,000
6,800		155,000	80,000
7,000		155,000	80,000
7,700		155,000	90,000
7,940	5/16	155,000	90,000
8,000		155,000	90,000

Spiralbohrer mit Zylinderschaft

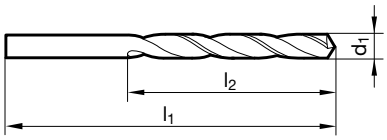
Stangenbohrer, Länge 12 inches

Katalog-Nr. 71141

N	NAS 907	HSS	blank	118°	h8	R	Cyl

P	M	K	N	S	H
●		●	●		

- Kegelmantelanschliff
- Bleche aus Al-Legierungen
- geschichtete Platten (Sandwich-Pakete)
- Stahl und Guss



d1 mm	inch	l1 mm	l2 mm
1,500		306,000	23,000
1,590	1/16	306,000	26,000
1,780		306,000	26,000
1,850		306,000	26,000
1,900		306,000	26,000
1,930		306,000	29,000
1,980	5/64	306,000	29,000
1,990		306,000	29,000
2,000		306,000	29,000
2,060		306,000	29,000
2,080		306,000	29,000
2,100		306,000	29,000
2,180		306,000	32,500
2,260		306,000	32,500
2,380	3/32	306,000	37,000
2,440		306,000	37,000
2,490		306,000	37,000
2,500		306,000	37,000
2,530		306,000	37,000
2,580		306,000	37,000
2,640		306,000	37,000
2,780	7/64	306,000	42,000
2,790		306,000	42,000
2,820		306,000	42,000
2,950		306,000	42,000
3,000		306,000	42,000
3,050		306,000	42,000
3,170	1/8	306,000	42,000
3,200		306,000	42,000
3,260		306,000	42,000
3,450		308,000	49,000
3,500		308,000	49,000
3,570	9/64	308,000	49,000
3,600		308,000	49,000
3,660		308,000	49,000
3,700		308,000	49,000
3,800		308,000	55,000
3,970	5/32	308,000	55,000
4,000		308,000	55,000
4,040		308,000	55,000
4,090		308,000	55,000
4,220		308,000	55,000

d1 mm	inch	l1 mm	l2 mm
4,300		308,000	60,000
4,370	11/64	308,000	60,000
4,390		308,000	60,000
4,500		308,000	60,000
4,570		308,000	60,000
4,620		308,000	60,000
4,700		308,000	60,000
4,760	3/16	308,000	63,500
4,800		308,000	63,500
4,850		308,000	63,500
4,920		308,000	63,500
4,980		308,000	63,500
5,000		308,000	63,500
5,160	13/64	308,000	63,500
5,220		308,000	63,500
5,410		308,000	68,500
5,500		308,000	68,500
5,560	7/32	308,000	68,500
5,790		308,000	68,500
5,800		308,000	68,500
5,950	15/64	308,000	68,500
6,000		308,000	68,500
6,040		308,000	75,000
6,150		308,000	75,000
6,200		308,000	75,000
6,250		308,000	75,000
6,350	1/4	308,000	75,000
6,530		308,000	75,000
7,000		310,000	80,000
7,700		310,000	90,000
7,940	5/16	310,000	90,000
8,000		310,000	90,000
8,500		310,000	90,000

Spiralbohrer mit Zylinderschaft

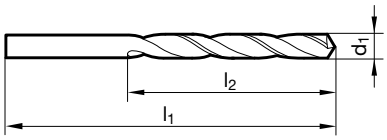
Stangenbohrer, Länge 12 inches

Katalog-Nr. 71143

N	NAS 907	HSS	ni-triert	135°	h8	R	Cyl

P	M	K	N	S	H
●		●	●		

- Kegelmantelanschliff
- Bleche aus Al-Legierungen
- geschichtete Platten (Sandwich-Pakete)
- Stahl und Guss



d1 mm	inch	l1 mm	l2 mm
1,500		306,000	23,000
1,590	1/16	306,000	26,000
1,780		306,000	26,000
1,900		306,000	26,000
1,980	5/64	306,000	29,000
2,000		306,000	29,000
2,300		306,000	32,500
2,380	3/32	306,000	37,000
2,490		306,000	37,000
2,500		306,000	37,000
2,530		306,000	37,000
2,580		306,000	37,000
2,640		306,000	37,000
2,710		306,000	42,000
2,780	7/64	306,000	42,000
2,790		306,000	42,000
2,820		306,000	42,000
2,870		306,000	42,000
2,950		306,000	42,000
3,000		306,000	42,000
3,050		306,000	42,000
3,170	1/8	306,000	42,000
3,200		306,000	42,000
3,260		306,000	42,000
3,450		308,000	49,000
3,500		308,000	49,000
3,600		308,000	49,000
3,660		308,000	49,000
3,700		308,000	49,000
3,730		308,000	49,000
3,800		308,000	55,000
3,970	5/32	308,000	55,000
3,990		308,000	55,000
4,000		308,000	55,000
4,040		308,000	55,000
4,090		308,000	55,000

d1 mm	inch	l1 mm	l2 mm
4,220		308,000	55,000
4,290		308,000	60,000
4,300		308,000	60,000
4,370	11/64	308,000	60,000
4,390		308,000	60,000
4,500		308,000	60,000
4,570		308,000	60,000
4,620		308,000	60,000
4,700		308,000	60,000
4,760	3/16	308,000	63,500
4,800		308,000	63,500
4,850		308,000	63,500
4,920		308,000	63,500
4,980		308,000	63,500
5,000		308,000	63,500
5,060		308,000	63,500
5,110		308,000	63,500
5,160	13/64	308,000	63,500
5,500		308,000	68,500
5,560	7/32	308,000	68,500
5,790		308,000	68,500
5,940		308,000	68,500
5,950	15/64	308,000	68,500
6,000		308,000	68,500
6,040		308,000	75,000
6,150		308,000	75,000
6,200		308,000	75,000
6,250		308,000	75,000
6,350	1/4	308,000	75,000
6,530		308,000	75,000
6,800		310,000	80,000
7,000		310,000	80,000
7,700		310,000	90,000
7,940	5/16	310,000	90,000
8,000		310,000	90,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

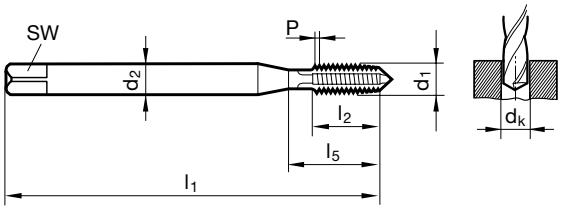
Katalog-Nr. 53733

Produktiv N-X | ~DIN 371/376 | B | HSS-E | AlTiZrN | R | 6HX

P	M	K	N	S	H
●	●	○	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M4,5	0,750	6,000	4,900	3,70	70,000	14,000	25,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M7	1,000	7,000	5,500	6,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M9	1,250	9,000	7,000	7,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M11	1,500	8,000	6,200	9,50	100,000	20,000	42,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	30,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M22	2,500	18,000	14,500	19,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000
M33	3,500	25,000	20,000	29,50	180,000	40,000	91,000
M36	4,000	28,000	22,000	32,00	200,000	50,000	102,000
M39	4,000	32,000	24,000	35,00	200,000	50,000	107,000
M42	4,500	32,000	24,000	37,50	200,000	56,000	112,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

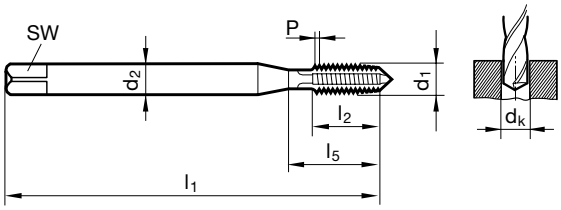
Katalog-Nr. 53734

Produktiv N-X LH | DIN 371/376 | B | HSS-E | AlTiZrN | L | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	30,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

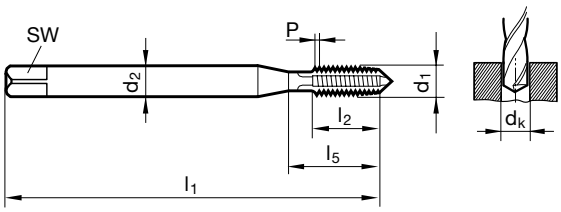
Katalog-Nr. 53735

Produktiv N-X | DIN 371/376 | B | HSS-E-PM | AlTiZrN | R | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

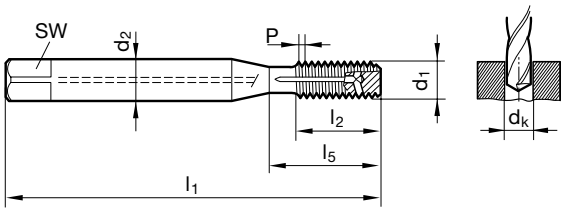
Katalog-Nr. 53736

Produktiv N-X	DIN 371/376	B	HSS-E-PM	AlTiZrN	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- radialer Kühlmittelaustritt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

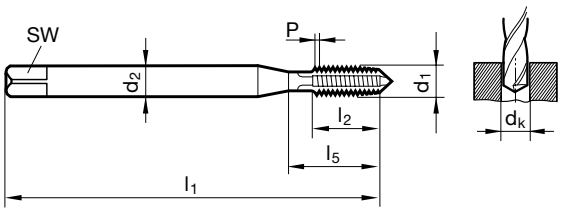
Katalog-Nr. 53737

Produktiv N-X | DIN 371/376 | B | HSS-E | AlTiZrN | R | 6H +0,1

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	30,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

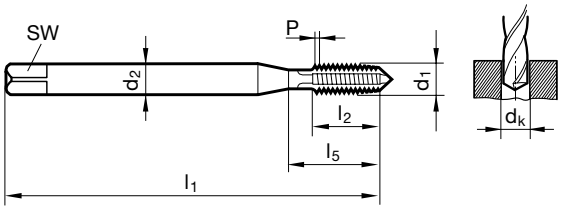
Katalog-Nr. 53738

Produktiv N-X	DIN 371/376	B	HSS-E	AlTiZrN	R	6GX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	30,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

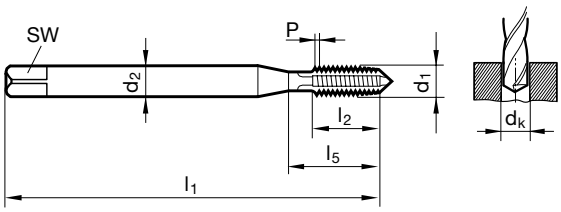
Katalog-Nr. 53739

Produktiv N-X | WN | B | HSS-E | AlTiZrN | R | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- überlang
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	90,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	125,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	140,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	160,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	180,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	200,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	220,000	24,000	158,000
M14	2,000	11,000	9,000	12,00	220,000	26,000	160,000
M16	2,000	12,000	9,000	14,00	220,000	26,000	160,000
M20	2,500	16,000	12,000	17,50	280,000	32,000	217,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

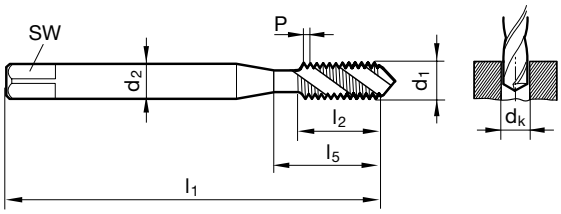
Katalog-Nr. 53746

Intensiv N-X	~DIN 371/376	C	HSS-E	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	5,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M3,5	0,600	4,000	3,000	2,90	56,000	7,000	20,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M4,5	0,750	6,000	4,900	3,70	70,000	8,500	25,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M7	1,000	7,000	5,500	6,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M9	1,250	9,000	7,000	7,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M11	1,500	8,000	6,200	9,50	100,000	16,000	42,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	25,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M22	2,500	18,000	14,500	19,50	140,000	27,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M27	3,000	20,000	16,000	24,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000
M33	3,500	25,000	20,000	29,50	180,000	40,000	91,000
M36	4,000	28,000	22,000	32,00	200,000	40,000	102,000
M39	4,000	32,000	24,000	35,00	200,000	50,000	107,000
M42	4,500	32,000	24,000	37,50	200,000	45,000	112,000

Gewindebohrer für Metrische ISO-Gewinde

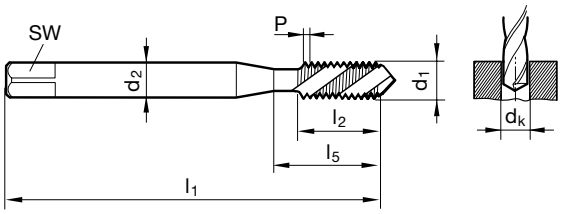
Katalog-Nr. 53747

Intensiv N-X LH	DIN 371/376	C	HSS-E	TiAlN-H	L	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	5,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	25,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

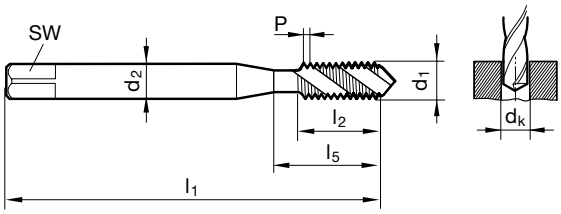
Katalog-Nr. 53748

Intensiv N-X	DIN 371/376	C	HSS-E-PM	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000

Gewindebohrer für Metrische ISO-Gewinde

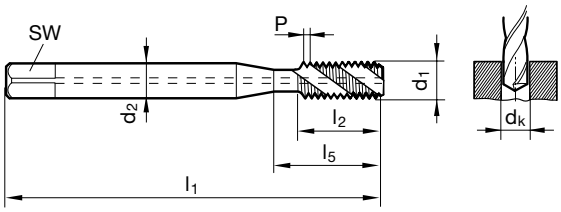
Katalog-Nr. 53749

Intensiv N-X	DIN 371/376	C	HSS-E-PM	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- mit axialem Kühlkanal
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

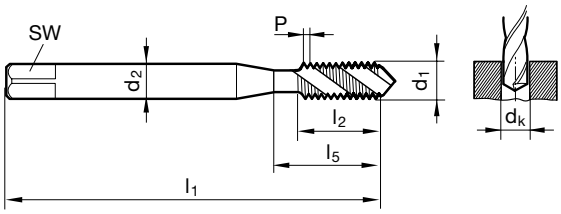
Katalog-Nr. 53760

Intensiv N-X	DIN 371/376	E	HSS-E	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- kurzer Anschnitt für Gewindetiefen nahe Bohrungsgrund
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	5,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	25,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

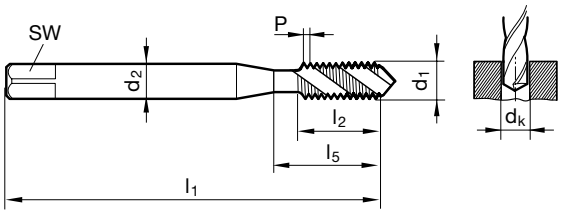
Katalog-Nr. 53750

Intensiv N-X	DIN 371/376	C	HSS-E	TiAlN-H	R	6H +0,1

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	5,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	25,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

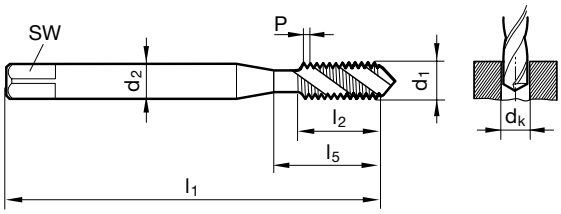
Katalog-Nr. 53751

Intensiv N-X	DIN 371/376	C	HSS-E	TiAlN-H	R	6GX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M2,5	0,450	2,800	2,100	2,05	50,000	5,000	14,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M18	2,500	14,000	11,000	15,50	125,000	25,000	62,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	30,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	35,000	85,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

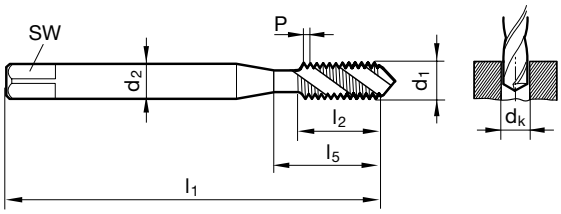
Katalog-Nr. 53752

Intensiv N-X | WN | C | HSS-E | TiAlN-H | R | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- überlang
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	90,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	125,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	140,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	160,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	180,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	200,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	220,000	18,500	158,000
M14	2,000	11,000	9,000	12,00	220,000	20,000	160,000
M16	2,000	12,000	9,000	14,00	220,000	20,000	160,000
M20	2,500	16,000	12,000	17,50	280,000	25,000	217,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

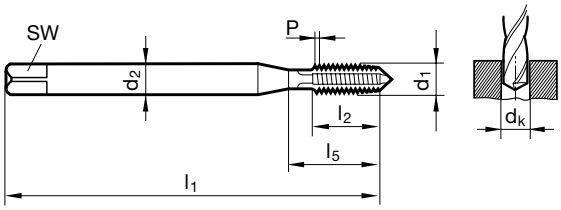
Katalog-Nr. 63033

Produktiv N | DIN 371/376 | B | HSS-E | TiN | R | ISO2/6H

P	M	K	N	S	H
●	○	○	○		

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1100 N/mm²



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

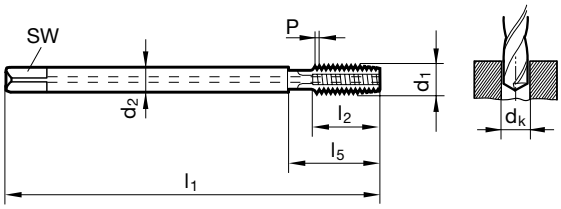
Katalog-Nr. 53646

H	DIN 376	C	HSS-E	TiCN	R	6HX

P	M	K	N	S	H
●		●	○		

Arbeitsrichtwerte Seite 182-203

- für große Gewinde
- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- für Gusswerkstoffe
- für Al-Legierungen ab 7% Si-Gehalt
- mit axialem Kühlkanal



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	160,000	36,000	73,000
M27	3,000	20,000	16,000	24,00	160,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	180,000	40,000	85,000
M33	3,500	25,000	20,000	29,50	180,000	40,000	91,000
M36	4,000	28,000	22,000	32,00	200,000	50,000	102,000
M39	4,000	32,000	24,000	35,00	200,000	50,000	107,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

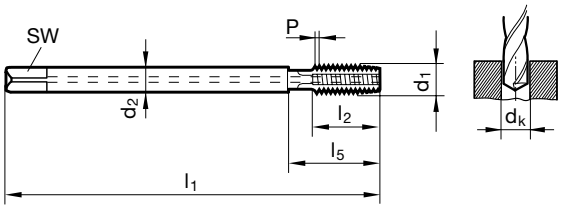
Katalog-Nr. 53647

H	~DIN 376	C	HSS-E	TiCN	R	6HX

P	M	K	N	S	H
●		●	○		

Arbeitsrichtwerte Seite 182-203

- für große Gewinde
- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- für Gusswerkstoffe
- für Al-Legierungen ab 7% Si-Gehalt
- mit axialem Kühlkanal
- für große Gewindetiefen



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M16	2,000	12,000	9,000	14,00	160,000	26,000	54,000
M20	2,500	16,000	12,000	17,50	180,000	32,000	62,000
M24	3,000	18,000	14,500	21,00	200,000	36,000	73,000
M27	3,000	20,000	16,000	24,00	225,000	36,000	73,000
M30	3,500	22,000	18,000	26,50	250,000	40,000	85,000
M33	3,500	25,000	20,000	29,50	275,000	40,000	91,000
M36	4,000	28,000	22,000	32,00	300,000	50,000	102,000
M39	4,000	32,000	24,000	35,00	325,000	50,000	107,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

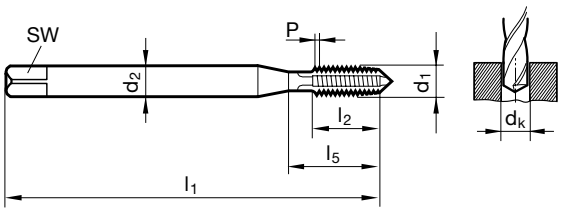
Katalog-Nr. 53642

Produktiv H | DIN 371/376 | B | HSS-E | TiCN | R | ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	8,000	13,500
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

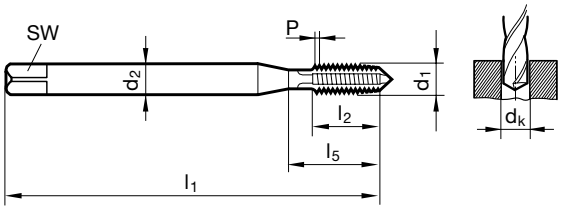
Katalog-Nr. 53640

Produktiv H | DIN 371/376 | B | HSS-E-PM | TiCN | R | ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,20	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,00	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	20,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	12,00	110,000	26,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	26,000	54,000

Gewindebohrer für Metrische ISO-Gewinde

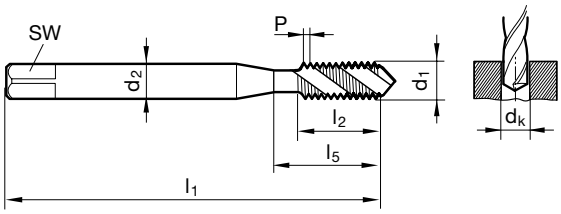
Katalog-Nr. 73661

Intensiv H | DIN 371 | C | HSS-E | nit-riert | R | ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 40° Rechtsdrall
- Spanförderung in Schaftrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

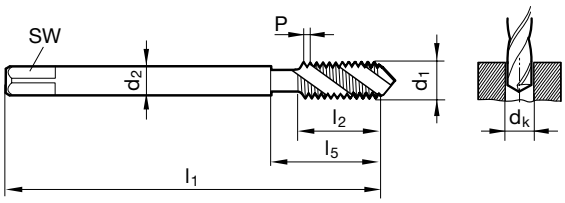
Katalog-Nr. 73664

Intensiv H	DIN 376	C	HSS-E	nit-riert	R	ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 40° Rechtsdrall
- Spanförderung in Schaftrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

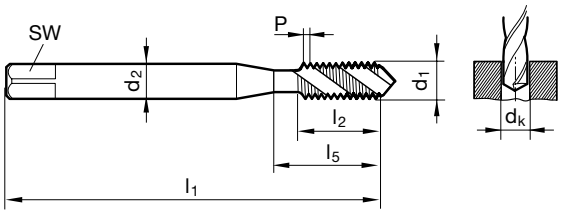
Katalog-Nr. 53661

Intensiv H | DIN 371/376 | C | HSS-E | TiCN | R | ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 40° Rechtsdrall
- Spanförderung in Schaftrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,60	45,000	4,500	13,500
M3	0,500	3,500	2,700	2,50	56,000	6,000	18,000
M4	0,700	4,500	3,400	3,30	63,000	7,500	21,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	12,00	110,000	20,000	53,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

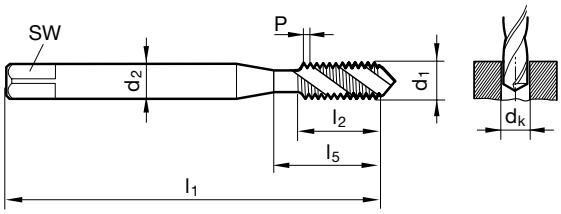
Katalog-Nr. 53664

Intensiv H | DIN 371/376 | C | HSS-E-PM | TiAlN | R | ISO2/6H

P	M	K	N	S	H
●		○			

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 15° Rechtsdrall
- Spanförderung in Schaftrichtung
- hochfeste Werkstoffe



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M4	0,700	4,500	3,400	3,30	63,000	7,500	25,000
M5	0,800	6,000	4,900	4,20	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,00	80,000	11,000	30,000
M8	1,250	8,000	6,200	6,80	90,000	14,000	35,000
M10	1,500	10,000	8,000	8,50	100,000	16,000	39,000
M12	1,750	9,000	7,000	10,20	110,000	18,500	49,000
M16	2,000	12,000	9,000	14,00	110,000	20,000	54,000
M20	2,500	16,000	12,000	17,50	140,000	25,000	62,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Gewinde

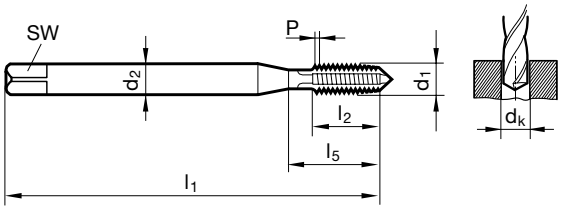
Katalog-Nr. 53676

H	DIN 371/376	D	HSS-E-PM	TiCN	R	6HX

P	M	K	N	S	H
					○

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- für Gewindetiefen bis 1,5xD
- für Materialien zwischen 45 - 55 HRC



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M3	0,500	3,500	2,700	2,60	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,40	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,30	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,10	80,000	16,000	30,000
M8	1,250	8,000	6,200	6,90	90,000	17,000	35,000
M10	1,500	10,000	8,000	8,60	100,000	20,000	39,000
M12	1,750	12,000	9,000	10,40	110,000	24,000	49,000
M14	2,000	14,000	11,000	12,10	110,000	26,000	53,000
M16	2,000	16,000	12,000	14,10	110,000	26,000	54,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

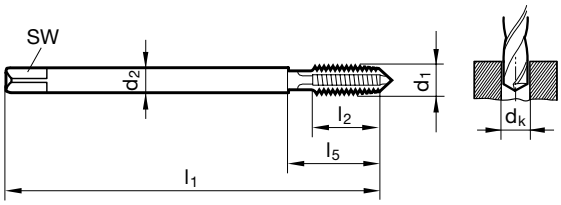
Katalog-Nr. 53778

Produktiv N-X	DIN 374	B	HSS-E	AlTiZrN	R	6HX

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe 600 bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
3,002	M3 x 0,35	2,200	1,800	2,65	56,000	7,000	18,000
4,002	M4 x 0,35	2,800	2,100	3,65	63,000	8,000	21,000
4,003	M4 x 0,5	2,800	2,100	3,50	63,000	8,000	21,000
5,003	M5 x 0,5	3,500	2,700	4,50	70,000	10,000	25,000
6,003	M6 x 0,5	4,500	3,400	5,50	80,000	13,000	30,000
6,004	M6 x 0,75	4,500	3,400	5,20	80,000	13,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	14,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	17,000	35,000
9,005	M9 x 1	7,000	5,500	8,00	90,000	16,000	35,000
10,004	M10 x 0,75	7,000	5,500	9,20	90,000	16,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	16,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	20,000	39,000
11,005	M11 x 1	8,000	6,200	10,00	90,000	20,000	33,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	20,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	20,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	20,000	40,000
14,005	M14 x 1	11,000	9,000	13,00	100,000	20,000	40,000
14,006	M14 x 1,25	11,000	9,000	12,80	100,000	20,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	20,000	40,000
16,005	M16 x 1	12,000	9,000	15,00	100,000	22,000	44,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	22,000	44,000
18,005	M18 x 1	14,000	11,000	17,00	110,000	25,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	25,000	44,000
18,008	M18 x 2	14,000	11,000	16,00	125,000	30,000	58,000
20,005	M20 x 1	16,000	12,000	19,00	125,000	25,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	25,000	44,000
20,008	M20 x 2	16,000	12,000	18,00	140,000	32,000	60,000
22,005	M22 x 1	18,000	14,500	21,00	125,000	25,000	44,000
22,007	M22 x 1,5	18,000	14,500	20,50	125,000	25,000	44,000
22,008	M22 x 2	18,000	14,500	20,00	140,000	32,000	62,000
24,005	M24 x 1	18,000	14,500	23,00	140,000	28,000	48,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	28,000	48,000
24,008	M24 x 2	18,000	14,500	22,00	140,000	28,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

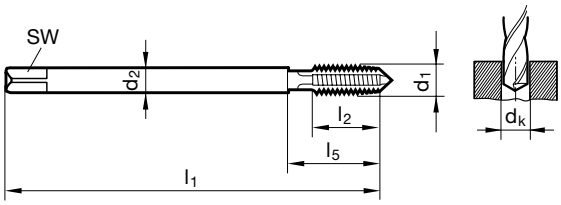
Katalog-Nr. 53789

Produktiv N-X	DIN 374	B	HSS-E-PM	AlTiZrN	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,00	90,000	17,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	16,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	20,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	20,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	20,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	20,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	20,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	22,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	25,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	25,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	28,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

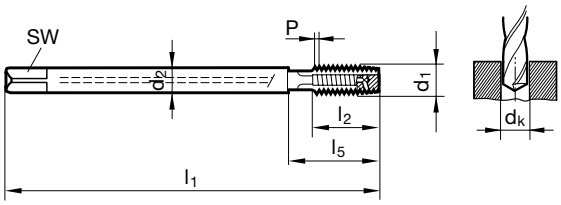
Katalog-Nr. 53790

Produktiv N-X | DIN 374 | B | HSS-E-PM | AlTiZrN | R | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- radialer Kühlmittelaustritt
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,00	90,000	17,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	16,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	20,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	20,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	20,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	20,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	20,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	22,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	25,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	25,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	28,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

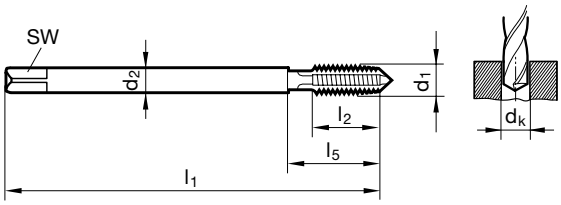
Katalog-Nr. 53779

Produktiv N-X | DIN 374 | B | HSS-E | AlTiZrN | R | 6GX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
6,004	M6 x 0,75	4,500	3,400	5,20	80,000	13,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	14,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	17,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	16,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	20,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	20,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	20,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	20,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	20,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	22,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	25,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	25,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	28,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

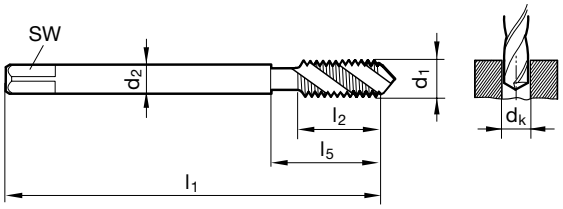
Katalog-Nr. 53780

Intensiv N-X	DIN 374	C	HSS-E	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe 600 bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
3,002	M3 x 0,35	2,200	1,800	2,65	56,000	4,000	18,000
4,002	M4 x 0,35	2,800	2,100	3,65	63,000	5,000	21,000
4,003	M4 x 0,5	2,800	2,100	3,50	63,000	5,000	21,000
5,003	M5 x 0,5	3,500	2,700	4,50	70,000	5,000	25,000
6,003	M6 x 0,5	4,500	3,400	5,50	80,000	5,000	30,000
6,004	M6 x 0,75	4,500	3,400	5,20	80,000	8,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	8,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
9,005	M9 x 1	7,000	5,500	8,00	90,000	11,000	35,000
10,004	M10 x 0,75	7,000	5,500	9,20	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	14,000	39,000
11,005	M11 x 1	8,000	6,200	10,00	90,000	11,000	33,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	15,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	15,000	40,000
14,005	M14 x 1	11,000	9,000	13,00	100,000	11,000	40,000
14,006	M14 x 1,25	11,000	9,000	12,80	100,000	15,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,005	M16 x 1	12,000	9,000	15,00	100,000	11,000	44,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,005	M18 x 1	14,000	11,000	17,00	110,000	12,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
18,008	M18 x 2	14,000	11,000	16,00	125,000	20,000	58,000
20,005	M20 x 1	16,000	12,000	19,00	125,000	12,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
20,008	M20 x 2	16,000	12,000	18,00	140,000	20,000	60,000
22,005	M22 x 1	18,000	14,500	21,00	125,000	12,000	44,000
22,007	M22 x 1,5	18,000	14,500	20,50	125,000	16,000	44,000
22,008	M22 x 2	18,000	14,500	20,00	140,000	22,000	62,000
24,005	M24 x 1	18,000	14,500	23,00	140,000	15,000	48,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000
24,008	M24 x 2	18,000	14,500	22,00	140,000	22,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

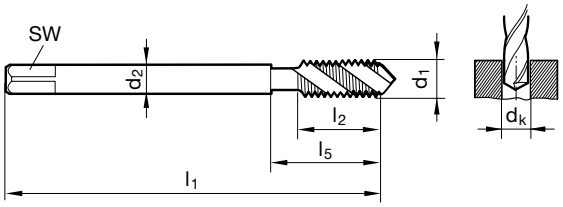
Katalog-Nr. 53791

Intensiv N-X	DIN 374	C	HSS-E-PM	TiAlN-H	R	6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	14,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	16,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

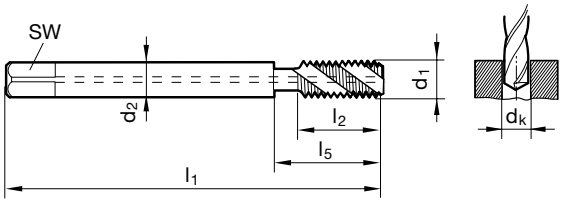
Katalog-Nr. 53792

Intensiv N-X | DIN 374 | C | HSS-E-PM | TiAlN-H | R | 6HX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- mit axialem Kühlkanal
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	14,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	16,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

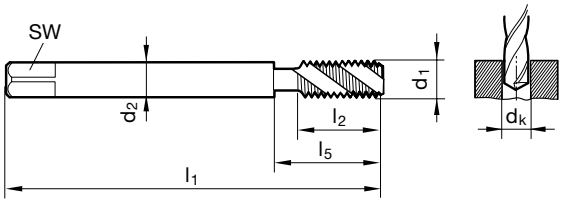
Katalog-Nr. 53770

Intensiv **N-X** | DIN **374** | **E** | **HSS-E** | **TiAlN-H** | **R** | **6HX**

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- kurzer Anschnitt für Gewindetiefen nahe Bohrungsgrund
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
6,004	M6 x 0,75	4,500	3,400	5,20	80,000	8,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	8,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	14,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	16,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

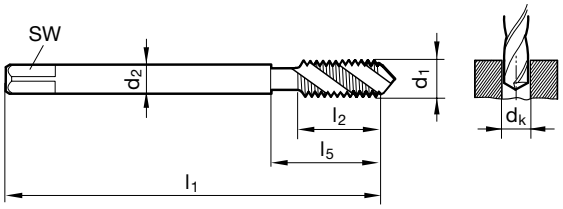
Katalog-Nr. 53781

Intensiv N-X	DIN 374	C	HSS-E	TiAlN-H	R	6GX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
6,004	M6 x 0,75	4,500	3,400	5,20	80,000	8,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	8,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	8,80	100,000	14,000	39,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,006	M12 x 1,25	9,000	7,000	10,80	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	16,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für Metrische ISO-Feingewinde

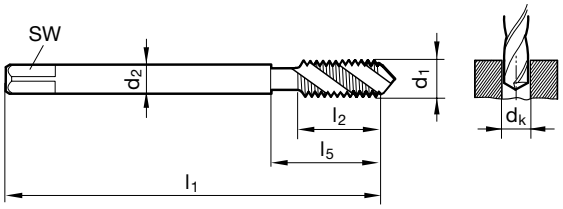
Katalog-Nr. 73647

Intensiv H | DIN 374 | C | HSS-E | nit-riert | R | ISO2/6H

P	M	K	N	S	H
≤ 1200					

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- hochfeste Werkstoffe
- Stähle 1100 bis 1200 N/mm²



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,004	M8 x 0,75	6,000	4,900	7,20	80,000	8,000	30,000
8,005	M8 x 1	6,000	4,900	7,00	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,00	90,000	11,000	35,000
12,005	M12 x 1	9,000	7,000	11,00	100,000	11,000	40,000
12,007	M12 x 1,5	9,000	7,000	10,50	100,000	15,000	40,000
14,007	M14 x 1,5	11,000	9,000	12,50	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	14,50	100,000	15,000	44,000
18,007	M18 x 1,5	14,000	11,000	16,50	110,000	16,000	44,000
20,007	M20 x 1,5	16,000	12,000	18,50	125,000	16,000	44,000
22,007	M22 x 1,5	18,000	14,500	20,50	125,000	16,000	44,000
24,007	M24 x 1,5	18,000	14,500	22,50	140,000	16,000	48,000

Maschinen-Gewindebohrer

Gewindebohrer für UNC-Gewinde

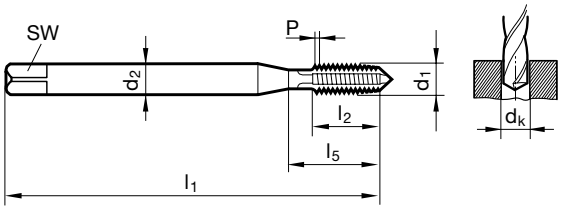
Katalog-Nr. 53782

Produktiv N-X	DIN 371/376	B	HSS-E	AlTiZrN	R	2BX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,184	2 - 56	2,800	2,100	1,85	45,000	9,000	14,500
2,845	4 - 40	3,500	2,700	2,35	56,000	11,000	18,000
3,505	6 - 32	4,000	3,000	2,85	56,000	12,000	20,000
4,166	8 - 32	4,500	3,400	3,50	63,000	12,000	21,000
4,826	10 - 24	6,000	4,900	3,90	70,000	14,000	25,000
5,486	12 - 24	6,000	4,900	4,50	80,000	16,000	30,000
6,350	1/4 - 20	7,000	5,500	5,10	80,000	16,000	30,000
7,938	5/16 - 18	8,000	6,200	6,60	90,000	18,000	35,000
9,525	3/8 - 16	10,000	8,000	8,00	100,000	20,000	39,000
11,113	7/16 - 14	8,000	6,200	9,40	100,000	22,000	42,000
12,700	1/2 - 13	9,000	7,000	10,80	110,000	25,000	49,000
14,288	9/16 - 12	11,000	9,000	12,20	110,000	28,000	53,000
15,875	5/8 - 11	12,000	9,000	13,50	110,000	30,000	53,000
19,050	3/4 - 10	14,000	11,000	16,50	125,000	33,000	62,000
22,225	7/8 - 9	18,000	14,500	19,50	140,000	35,000	62,000
25,400	1 - 8	18,000	14,500	22,25	160,000	38,000	73,000

Maschinen-Gewindebohrer

Gewindebohrer für UNC-Gewinde

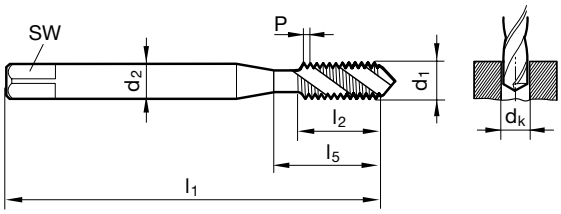
Katalog-Nr. 53783

Intensiv **N-X** | DIN 371/376 | **C** | **HSS-E** | **TiAlN-H** | **R** | **2BX**

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,184	2 - 56	2,800	2,100	1,85	45,000	5,000	14,500
2,845	4 - 40	3,500	2,700	2,35	56,000	7,000	18,000
3,505	6 - 32	4,000	3,000	2,85	56,000	8,000	20,000
4,166	8 - 32	4,500	3,400	3,50	63,000	8,000	21,000
4,826	10 - 24	6,000	4,900	3,90	70,000	11,000	25,000
5,486	12 - 24	6,000	4,900	4,50	80,000	11,000	30,000
6,350	1/4 - 20	7,000	5,500	5,10	80,000	13,000	30,000
7,938	5/16 - 18	8,000	6,200	6,60	90,000	14,000	35,000
9,525	3/8 - 16	10,000	8,000	8,00	100,000	16,000	39,000
11,113	7/16 - 14	8,000	6,200	9,40	100,000	18,000	42,000
12,700	1/2 - 13	9,000	7,000	10,80	110,000	20,000	49,000
14,288	9/16 - 12	11,000	9,000	12,20	110,000	21,000	53,000
15,875	5/8 - 11	12,000	9,000	13,50	110,000	24,000	53,000
19,050	3/4 - 10	14,000	11,000	16,50	125,000	25,000	62,000
22,225	7/8 - 9	18,000	14,500	19,50	140,000	28,000	62,000
25,400	1 - 8	18,000	14,500	22,25	160,000	32,000	73,000

Maschinen-Gewindebohrer

Gewindebohrer für UNF-Gewinde

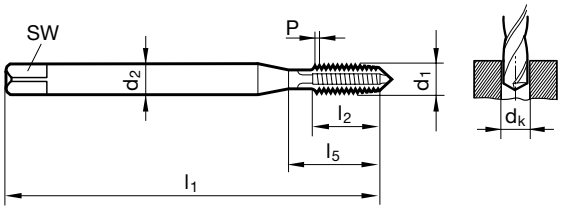
Katalog-Nr. 53784

Produktiv N-X | ~DIN 371/374 | B | HSS-E | AlTiZrN | R | 2BX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Durchgangsgewinde
- mit Schälanschnitt
- Spanförderung in Vorschubrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,184	2 - 64	2,800	2,100	1,85	45,000	9,000	14,500
2,845	4 - 48	3,500	2,700	2,40	56,000	10,000	18,000
3,505	6 - 40	4,000	3,000	2,95	56,000	11,000	20,000
4,166	8 - 36	4,500	3,400	3,50	63,000	12,000	21,000
4,826	10 - 32	6,000	4,900	4,10	70,000	14,000	25,000
5,486	12 - 28	6,000	4,900	4,60	80,000	16,000	30,000
6,350	1/4 - 28	7,000	5,500	5,50	80,000	16,000	30,000
7,938	5/16 - 24	8,000	6,200	6,90	90,000	17,000	35,000
9,525	3/8 - 24	10,000	8,000	8,50	90,000	18,000	35,000
11,113	7/16 - 20	8,000	6,200	9,90	100,000	22,000	42,000
12,700	1/2 - 20	9,000	7,000	11,50	100,000	20,000	40,000
14,288	9/16 - 18	11,000	9,000	12,90	100,000	22,000	40,000
15,875	5/8 - 18	12,000	9,000	14,50	100,000	22,000	44,000
19,050	3/4 - 16	14,000	11,000	17,50	110,000	25,000	44,000
22,225	7/8 - 14	18,000	14,500	20,40	125,000	25,000	44,000
25,400	1 - 12	18,000	14,500	23,25	140,000	28,000	50,000

Maschinen-Gewindebohrer

Gewindebohrer für UNF-Gewinde

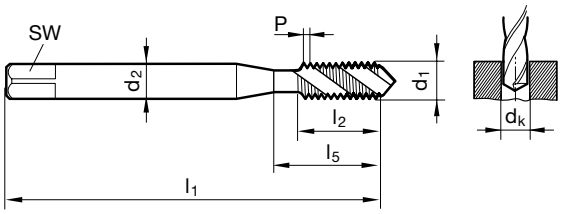
Katalog-Nr. 53785

Intensiv N-X | ~DIN 371/374 | C | HSS-E | TiAlN-H | R | 2BX

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,184	2 - 64	2,800	2,100	1,85	45,000	5,000	14,500
2,845	4 - 48	3,500	2,700	2,40	56,000	6,000	18,000
3,505	6 - 40	4,000	3,000	2,95	56,000	6,500	20,000
4,166	8 - 36	4,500	3,400	3,50	63,000	7,000	21,000
4,826	10 - 32	6,000	4,900	4,10	70,000	8,500	25,000
5,486	12 - 28	6,000	4,900	4,60	80,000	9,500	30,000
6,350	1/4 - 28	7,000	5,500	5,50	80,000	9,500	30,000
7,938	5/16 - 24	8,000	6,200	6,90	90,000	11,500	35,000
9,525	3/8 - 24	10,000	8,000	8,50	90,000	11,500	35,000
11,113	7/16 - 20	8,000	6,200	9,90	100,000	13,000	42,000
12,700	1/2 - 20	9,000	7,000	11,50	100,000	13,000	40,000
14,288	9/16 - 18	11,000	9,000	12,90	100,000	14,000	40,000
15,875	5/8 - 18	12,000	9,000	14,50	100,000	15,000	44,000
19,050	3/4 - 16	14,000	11,000	17,50	110,000	16,000	44,000
22,225	7/8 - 14	18,000	14,500	20,40	125,000	19,000	44,000
25,400	1 - 12	18,000	14,500	23,25	140,000	22,000	50,000

Maschinen-Gewindebohrer

Gewindebohrer für Whitworth-Rohrgewinde

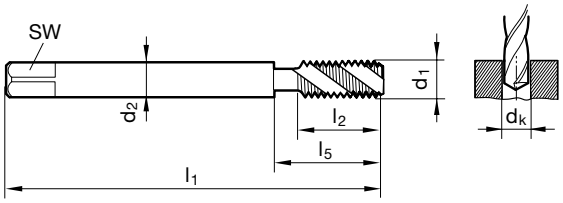
Katalog-Nr. 53775

Intensiv N-X | DIN 5156 | E | HSS-E | TiAlN-H | R

P	M	K	N	S	H
●	●	○	○	○	

Arbeitsrichtwerte Seite 182-203

- für Grundgewinde
- Nuten mit ca. 45° Rechtsdrall
- Spanförderung in Schaftrichtung
- kurzer Anschnitt für Gewindetiefen nahe Bohrungsgrund
- universell einsetzbar
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- NE-Metalle
- Gusswerkstoffe



Code-Nr.	d1	P G/inch	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
7,723	G1/16	28	6,000	4,900	6,80	90,000	11,000	30,000
9,728	G1/8	28	7,000	5,500	8,80	90,000	11,000	35,000
13,157	G1/4	19	11,000	9,000	11,80	100,000	14,000	40,000
16,662	G3/8	19	12,000	9,000	15,25	100,000	14,000	44,000
20,955	G1/2	14	16,000	12,000	19,00	125,000	18,000	44,000
22,911	G5/8	14	18,000	14,500	21,00	125,000	18,000	48,000
26,441	G3/4	14	20,000	16,000	24,50	140,000	20,000	53,000
30,201	G7/8	14	22,000	18,000	28,25	150,000	22,000	53,000
33,249	G1	11	25,000	20,000	30,75	160,000	24,000	56,000

Gewindeformer mit Schmiernuten

Gewindeformer für Metrische ISO-Gewinde

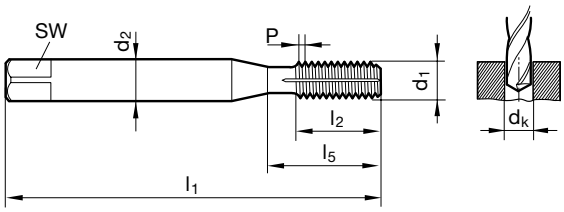
Katalog-Nr. 53630

Durativ N-X | ~DIN 371/376 | C | HSS-E-PM | TiCN | R | 4HX/6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M1	0,250	2,500	2,100	0,90	40,000	4,000	4,000
M1,2	0,250	2,500	2,100	1,10	40,000	4,800	4,800
M1,4	0,300	2,500	2,100	1,25	40,000	5,600	5,600
M1,6	0,350	2,500	2,100	1,45	40,000	6,400	6,400
M1,7	0,350	2,500	2,100	1,55	40,000	6,800	6,800
M1,8	0,350	2,500	2,100	1,65	40,000	7,300	7,300
M2	0,400	2,800	2,100	1,85	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,30	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,80	56,000	10,000	18,000
M3,5	0,600	4,000	3,000	3,25	56,000	12,000	20,000
M4	0,700	4,500	3,400	3,70	63,000	12,000	21,000
M4,5	0,750	6,000	4,900	4,20	70,000	14,000	25,000
M5	0,800	6,000	4,900	4,65	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,55	80,000	16,000	30,000
M7	1,000	7,000	5,500	6,55	80,000	16,000	30,000
M8	1,250	8,000	6,200	7,40	90,000	17,000	35,000
M9	1,250	9,000	7,000	8,40	90,000	17,000	35,000
M10	1,500	10,000	8,000	9,30	100,000	20,000	39,000
M11	1,500	8,000	6,200	10,30	100,000	20,000	42,000
M12	1,750	9,000	7,000	11,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	13,10	110,000	26,000	53,000
M16	2,000	12,000	9,000	15,10	110,000	26,000	54,000
M20	2,500	16,000	12,000	18,90	140,000	32,000	62,000

Gewindeformer mit Schmiernuten

Gewindeformer für Metrische ISO-Gewinde

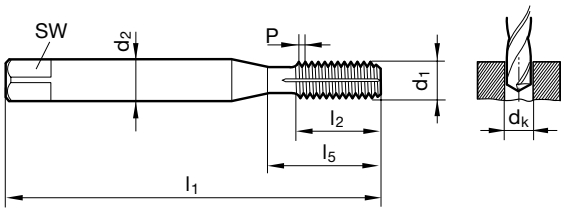
Katalog-Nr. 53631

Durativ N-X | ~DIN 371/376 | C | HSS-E-PM | TiCN | R | 6GX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,85	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,30	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,80	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,70	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,65	70,000	14,000	25,000
M6	1,000	6,000	4,900	5,55	80,000	16,000	30,000
M8	1,250	8,000	6,200	7,40	90,000	17,000	35,000
M10	1,500	10,000	8,000	9,30	100,000	20,000	39,000
M12	1,750	9,000	7,000	11,20	110,000	24,000	49,000
M14	2,000	11,000	9,000	13,10	110,000	26,000	53,000
M16	2,000	12,000	9,000	15,10	110,000	26,000	54,000
M20	2,500	16,000	12,000	18,90	140,000	32,000	62,000

Gewindeformer mit Schmiernuten

Gewindeformer für Metrische ISO-Feingewinde

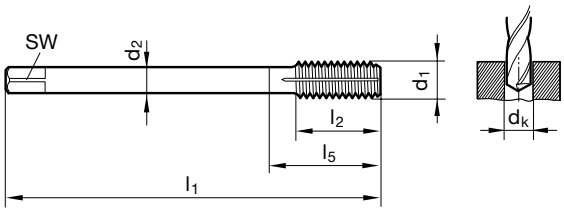
Katalog-Nr. 53632

Durativ N-X | ~DIN 374 | C | HSS-E-PM | TiCN | R | 6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
3,002	M3 x 0,35	2,200	1,800	2,85	56,000	7,000	18,000
4,002	M4 x 0,35	2,800	2,100	3,85	63,000	8,000	21,000
4,003	M4 x 0,5	2,800	2,100	3,80	63,000	8,000	21,000
5,003	M5 x 0,5	3,500	2,700	4,80	70,000	10,000	25,000
6,003	M6 x 0,5	4,500	3,400	5,75	80,000	13,000	30,000
6,004	M6 x 0,75	4,500	3,400	5,65	80,000	13,000	30,000
8,004	M8 x 0,75	6,000	4,900	7,65	80,000	14,000	30,000
8,005	M8 x 1	6,000	4,900	7,55	90,000	17,000	35,000
9,005	M9 x 1	7,000	5,500	8,55	90,000	16,000	35,000
10,004	M10 x 0,75	7,000	5,500	9,65	90,000	16,000	35,000
10,005	M10 x 1	7,000	5,500	9,55	90,000	16,000	35,000
10,006	M10 x 1,25	7,000	5,500	9,40	100,000	20,000	39,000
11,005	M11 x 1	8,000	6,200	10,55	90,000	20,000	33,000
12,005	M12 x 1	9,000	7,000	11,55	100,000	20,000	40,000
12,006	M12 x 1,25	9,000	7,000	11,40	100,000	20,000	40,000
12,007	M12 x 1,5	9,000	7,000	11,30	100,000	20,000	40,000
14,005	M14 x 1	11,000	9,000	13,55	100,000	20,000	40,000
14,006	M14 x 1,25	11,000	9,000	13,40	100,000	20,000	40,000
14,007	M14 x 1,5	11,000	9,000	13,30	100,000	20,000	40,000
16,005	M16 x 1	12,000	9,000	15,55	100,000	22,000	44,000
16,007	M16 x 1,5	12,000	9,000	15,30	100,000	22,000	44,000
18,005	M18 x 1	14,000	11,000	17,55	110,000	25,000	44,000
18,007	M18 x 1,5	14,000	11,000	17,30	110,000	25,000	44,000
18,008	M18 x 2	14,000	11,000	17,10	125,000	30,000	58,000
20,005	M20 x 1	16,000	12,000	19,55	125,000	25,000	44,000
20,007	M20 x 1,5	16,000	12,000	19,30	125,000	25,000	44,000
20,008	M20 x 2	16,000	12,000	19,10	140,000	32,000	60,000
22,005	M22 x 1	18,000	14,500	21,55	125,000	25,000	44,000
22,007	M22 x 1,5	18,000	14,500	21,30	125,000	25,000	44,000
22,008	M22 x 2	18,000	14,500	21,10	140,000	32,000	62,000
24,005	M24 x 1	18,000	14,500	23,55	140,000	28,000	48,000
24,007	M24 x 1,5	18,000	14,500	23,30	140,000	28,000	48,000
24,008	M24 x 2	18,000	14,500	23,10	140,000	28,000	48,000

Gewindeformer mit Schmiernuten

Gewindeformer für UNC-Gewinde

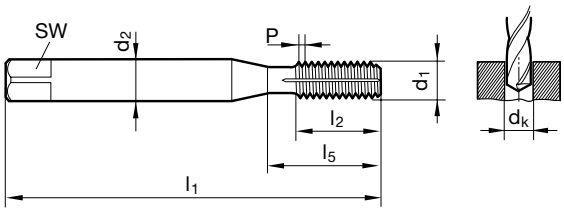
Katalog-Nr. 53633

Durativ N-X | ~DIN 371/376 | C | HSS-E-PM | TiCN | R | 2BX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,845	4 - 40	3,500	2,700	2,55	56,000	11,000	18,000
3,505	6 - 32	4,000	3,000	3,15	56,000	12,000	20,000
4,166	8 - 32	4,500	3,400	3,80	63,000	12,000	21,000
4,826	10 - 24	6,000	4,900	4,35	70,000	14,000	25,000
5,486	12 - 24	6,000	4,900	5,00	80,000	16,000	30,000
6,350	1/4 - 20	7,000	5,500	5,75	80,000	16,000	30,000
7,938	5/16 - 18	8,000	6,200	7,30	90,000	18,000	35,000
9,525	3/8 - 16	10,000	8,000	8,80	90,000	20,000	35,000
11,113	7/16 - 14	8,000	6,200	10,30	100,000	22,000	42,000
12,700	1/2 - 13	9,000	7,000	11,80	100,000	25,000	40,000
14,288	9/16 - 12	11,000	9,000	13,30	100,000	28,000	40,000
15,875	5/8 - 11	12,000	9,000	14,80	100,000	30,000	44,000
19,050	3/4 - 10	14,000	11,000	17,90	110,000	33,000	44,000

Gewindeformer mit Schmiernuten

Gewindeformer für UNF-Gewinde

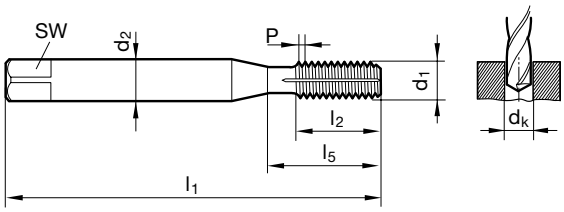
Katalog-Nr. 53634

Durativ N-X | ~DIN 371/374 | C | HSS-E-PM | TiCN | R | 2BX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
2,845	4 - 48	3,500	2,700	2,60	56,000	10,000	18,000
3,505	6 - 40	4,000	3,000	3,20	56,000	11,000	20,000
4,166	8 - 36	4,500	3,400	3,85	63,000	12,000	21,000
4,826	10 - 32	6,000	4,900	4,45	70,000	14,000	25,000
5,486	12 - 28	6,000	4,900	5,10	80,000	16,000	30,000
6,350	1/4 - 28	7,000	5,500	5,95	80,000	16,000	30,000
7,938	5/16 - 24	8,000	6,200	7,45	90,000	18,000	35,000
9,525	3/8 - 24	10,000	8,000	9,05	100,000	18,000	39,000
11,113	7/16 - 20	8,000	6,200	10,55	100,000	22,000	42,000
12,700	1/2 - 20	9,000	7,000	12,10	100,000	20,000	40,000
14,288	9/16 - 18	11,000	9,000	13,65	100,000	22,000	40,000
15,875	5/8 - 18	12,000	9,000	15,25	100,000	22,000	44,000
19,050	3/4 - 16	14,000	11,000	18,35	110,000	25,000	44,000

Gewindeformer ohne Schmiernuten

Gewindeformer für Whitworth-Rohrgewinde

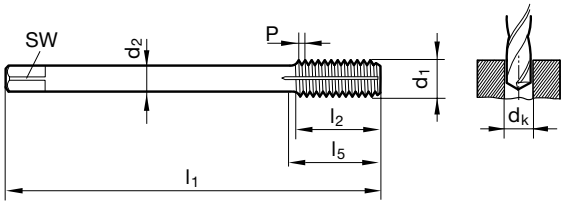
Katalog-Nr. 53635

Durativ N-X | DIN 2189 | C | HSS-E-PM | TiCN | R

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen



Code-Nr.	d1	P G/inch	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
9,728	G1/8	28	7,000	5,500	9,30	90,000	18,000	35,000
13,157	G1/4	19	11,000	9,000	12,50	100,000	20,000	40,000
16,662	G3/8	19	12,000	9,000	16,00	100,000	22,000	44,000
20,955	G1/2	14	16,000	12,000	20,00	125,000	25,000	44,000

Gewindeformer mit Schmiernuten

Kühlkanal-Gewindeformer für Metr. ISO-Gewinde

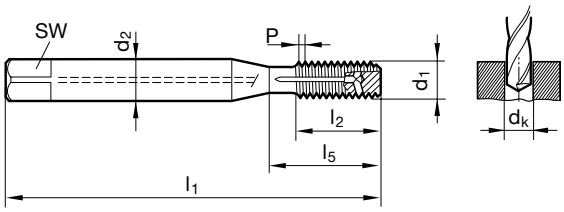
Katalog-Nr. 53610

Durativ N-X | ~DIN 371/376 | C | HSS-E-PM | TiCN | R | 6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen
- radialer Kühlmittelaustritt



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M5	0,800	6,000	4,900	4,65	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,55	80,000	11,000	30,000
M8	1,250	8,000	6,200	7,40	90,000	14,000	35,000
M10	1,500	10,000	8,000	9,30	100,000	16,000	39,000
M12	1,750	9,000	7,000	11,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	13,10	110,000	20,000	53,000
M16	2,000	12,000	9,000	15,10	110,000	20,000	54,000
M20	2,500	16,000	12,000	18,90	140,000	25,000	62,000

Gewindeformer mit Schmiernuten

Kühlkanal-Gewindeformer für Metr. ISO-Gewinde

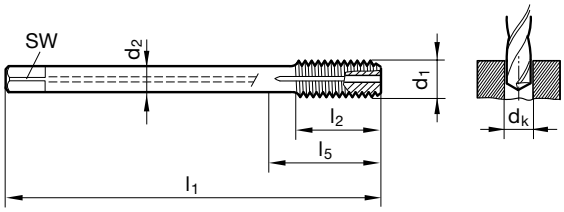
Katalog-Nr. 53618

Durativ N-X | ~DIN 371/376 | E | HSS-E-PM | TiCN | R | 6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen
- mit axialem Kühlkanal
- kurzer Anschnitt für Gewindetiefen nahe Bohrungsgrund



d1	P mm	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
M2	0,400	2,800	2,100	1,85	45,000	8,000	13,500
M2,5	0,450	2,800	2,100	2,30	50,000	9,000	14,500
M3	0,500	3,500	2,700	2,80	56,000	10,000	18,000
M4	0,700	4,500	3,400	3,70	63,000	12,000	21,000
M5	0,800	6,000	4,900	4,65	70,000	8,500	25,000
M6	1,000	6,000	4,900	5,55	80,000	11,000	30,000
M8	1,250	8,000	6,200	7,40	90,000	14,000	35,000
M10	1,500	10,000	8,000	9,30	100,000	16,000	39,000
M12	1,750	9,000	7,000	11,20	110,000	18,500	49,000
M14	2,000	11,000	9,000	13,10	110,000	20,000	53,000
M16	2,000	12,000	9,000	15,10	110,000	20,000	54,000
M20	2,500	16,000	12,000	18,90	140,000	25,000	62,000

Gewindeformer mit Schmiernuten

Kühlkanal-Gewindeformer für Metr. ISO-Feingewinde

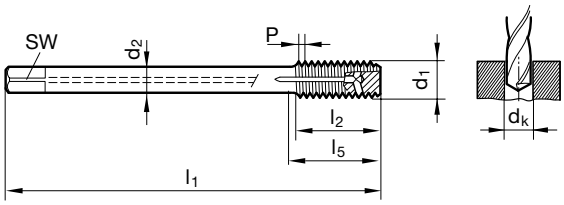
Katalog-Nr. 53612

Durativ N-X | ~DIN 374 | C | HSS-E-PM | TiCN | R | 6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen
- radialer Kühlmittelaustritt



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,55	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,55	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	9,40	100,000	14,000	39,000
12,006	M12 x 1,25	9,000	7,000	11,40	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	11,30	100,000	16,000	40,000
14,006	M14 x 1,25	11,000	9,000	13,40	100,000	15,000	40,000
14,007	M14 x 1,5	11,000	9,000	13,30	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	15,30	100,000	15,000	44,000
20,007	M20 x 1,5	16,000	12,000	19,30	125,000	16,000	44,000

Gewindeformer mit Schmiernuten

Kühlkanal-Gewindeformer für Metr. ISO-Feingewinde

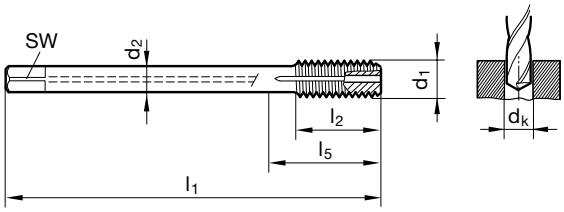
Katalog-Nr. 53619

Durativ N-X | ~DIN 374 | E | HSS-E-PM | TiCN | R | 6HX

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 182-203

- für Durchgangs- und Grundgewinde
- Stahlwerkstoffe bis 1200 N/mm²
- rost-/säurebeständige Stähle
- formbare Gusswerkstoffe
- formbare Nichteisenmetalle
- Sonderlegierungen
- mit axialem Kühlkanal



Code-Nr.	d1	d2 mm	SW mm	dk mm	l1 mm	l2 mm	l5 mm
8,005	M8 x 1	6,000	4,900	7,55	90,000	11,000	35,000
10,005	M10 x 1	7,000	5,500	9,55	90,000	11,000	35,000
10,006	M10 x 1,25	7,000	5,500	9,40	100,000	14,000	39,000
12,006	M12 x 1,25	9,000	7,000	11,40	100,000	16,000	40,000
12,007	M12 x 1,5	9,000	7,000	11,30	100,000	16,000	40,000
14,006	M14 x 1,25	11,000	9,000	13,40	100,000	15,000	40,000
14,007	M14 x 1,5	11,000	9,000	13,30	100,000	15,000	40,000
16,007	M16 x 1,5	12,000	9,000	15,30	100,000	15,000	44,000
20,007	M20 x 1,5	16,000	12,000	19,30	125,000	16,000	44,000

Bohrgewindefräser für Metrische ISO-Gewinde

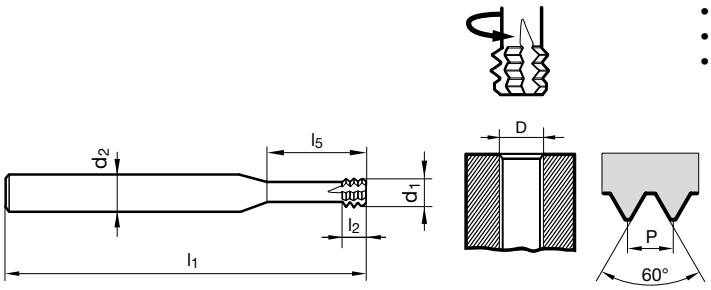
Katalog-Nr. 53948

TMD-NX | 2,5xD | WN | VHM | TiSiN | L | ~HB

P	M	K	N	S	H
●	●	●	●	●	≤ 66

Arbeitsrichtwerte Seite 182-203

- zirkulares Gewindefräsen, Kernloch und Gewinde in einem Arbeitsgang
- universeller Einsatz, auch für gehärtete Stähle bis 66 HRC
- linksschneidendes Werkzeug für höchste Stabilität beim Gleichlauffräsen
- mit Kühlrillen am Schaft



Code-Nr.	D	P mm	d1 mm	d2 mm	l1 mm	l2 mm	l5 mm	Z	PR
2,000	M2	0,400	1,400	3,000	39,000	1,200	5,000	4	0,67
2,500	M2,5	0,450	1,800	3,000	39,000	1,300	6,500	4	0,87
3,000	M3	0,500	2,400	6,000	58,000	1,500	7,500	4	1,17
3,500	M3,5	0,600	2,700	6,000	58,000	1,800	9,000	4	1,32
4,000	M4	0,700	3,100	6,000	58,000	2,100	10,000	4	1,52
5,000	M5	0,800	3,800	6,000	58,000	2,400	12,500	4	1,87
6,000	M6	1,000	4,600	8,000	64,000	3,000	15,000	4	2,27
6,003	M6 x 0,5	0,500	3,800	8,000	64,000	2,400	15,000	4	1,87
8,000	M8	1,250	6,200	8,000	64,000	3,600	20,000	4	3,07
8,004	M8 x 0,75	0,750	4,600	8,000	64,000	3,000	20,000	4	2,27
10,000	M10	1,500	7,500	10,000	73,000	4,500	25,000	4	3,69
12,000	M12	1,750	9,000	10,000	73,000	5,200	30,000	4	4,44
12,005	M12 x 1	1,000	7,500	10,000	73,000	3,000	25,000	4	3,72
16,000	M16	2,000	11,500	12,000	90,000	6,000	40,000	4	5,69
16,007	M16 x 1,5	1,500	11,500	12,000	90,000	4,500	40,000	4	5,69

Gewindefräser

Bohrgewindefräser für UNC-/UNF-Gewinde

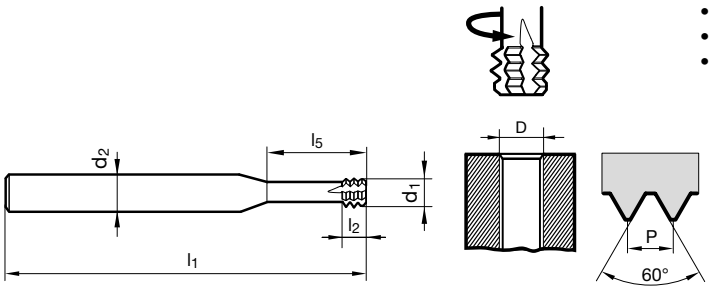
Katalog-Nr. 53949

TMD-NX | 2,5xD | WN | VHM | TiSiN | L | HA/HB

P	M	K	N	S	H
●	●	●	●	●	≤ 66

Arbeitsrichtwerte Seite 182-203

- zirkulares Gewindefräsen, Kernloch und Gewinde in einem Arbeitsgang
- universeller Einsatz, auch für gehärtete Stähle bis 66 HRC
- linksschneidendes Werkzeug für höchste Stabilität beim Gleichlauffräsen
- mit Kühlrillen am Schaft



Code-Nr.	D	P G/inch	d1 mm	d2 mm	l1 mm	l2 mm	l5 mm	Z	PR
1,853	UNF No 1	72	1,400	3,000	39,000	1,100	5,000	4	0,67
1,854	UNC No 1+UNF No 2	64	1,400	3,000	39,000	1,200	5,000	4	0,67
2,184	UNC No 2+UNF No 3	56	1,600	3,000	39,000	1,400	5,500	4	0,77
2,515	UNC No 3+UNF No 4	48	1,900	3,000	39,000	1,600	6,500	4	0,92
2,845	UNC No 4	40	2,100	6,000	58,000	1,900	7,500	4	1,02
3,175	UNC No 5+UNF No 6	40	2,400	6,000	58,000	1,900	8,000	4	1,17
3,505	UNC No 6	32	2,600	6,000	58,000	2,400	9,000	4	1,27
4,165	UNF No 8	36	3,200	6,000	58,000	2,100	10,500	4	1,57
4,166	UNC No 8	32	3,100	6,000	58,000	2,400	10,500	4	1,52
4,825	UNF No10	32	3,600	6,000	58,000	2,400	12,500	4	1,77
4,826	UNC No10+UNC No12	24	3,600	6,000	58,000	3,200	12,500	4	1,77
5,485	UNF No12	28	4,100	6,000	58,000	2,700	14,000	4	2,02
6,349	UNF 1/4	28	4,800	6,000	58,000	2,700	16,000	4	2,37
6,350	UNC 1/4	20	4,800	6,000	58,000	3,800	16,000	4	2,34
7,937	UNF 5/16+UNF 3/8	24	6,300	8,000	64,000	3,200	20,000	4	3,12
7,938	UNC 5/16	18	6,300	8,000	64,000	4,200	20,000	4	3,09
9,525	UNC 3/8	16	7,200	8,000	64,000	4,800	24,000	4	3,54
11,112	UNF 7/16	20	8,300	10,000	73,000	3,800	28,000	4	4,09
11,113	UNC 7/16	14	8,300	10,000	73,000	5,400	28,000	4	4,09
12,700	UNF 1/2	20	9,700	10,000	73,000	3,800	31,000	4	4,79
15,874	UNF 5/8	18	11,800	12,000	90,000	4,200	40,000	4	5,84

Bohrgewindefräser

Bohrgewindefräser für Rohrgewinde

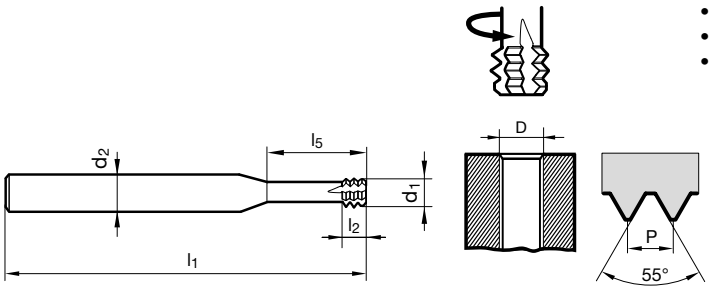
Katalog-Nr. 53950

TMD-NX | 2,5xD | WN | VHM | TiSiN | L | ~HB

P	M	K	N	S	H
●	●	●	●	●	≤ 66

Arbeitsrichtwerte Seite 182-203

- zirkulares Gewindefräsen, Kernloch und Gewinde in einem Arbeitsgang
- universeller Einsatz, auch für gehärtete Stähle bis 66 HRC
- linksschneidendes Werkzeug für höchste Stabilität beim Gleichlauffräsen
- mit Kühlrillen am Schaft



Code-Nr.	D	P G/inch	d1 mm	d2 mm	l1 mm	l2 mm	l5 mm	Z	PR
9,728	G1/16-G1/8	28	6,100	8,000	64,000	2,700	24,000	4	3,02
16,662	G1/4-G3/8	19	10,300	12,000	90,000	4,000	40,000	4	5,09
26,441	G1/2-G5/8-G3/4	14	15,700	16,000	105,000	5,400	50,000	4	7,79

Gewindefräser

Gewindefräser mit Senkfase für Metrische ISO-Gewinde

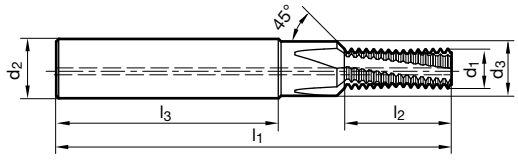
Katalog-Nr. 53890

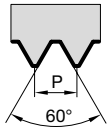
TMC-NX SP | 2xD | WN | VHM | AlCrN | R | HB

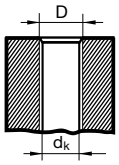
P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 182-203

- universelle Verwendung
- mit Innenkühlung ab M4
- erhöhte Schneidenzahl für kürzeste Bearbeitungszeiten
- sehr hohe Prozesssicherheit durch neue Geometrie







Code-Nr.	D	P mm	d1 mm	d2 mm	d3 mm	dk mm	l1 mm	l2 mm	l3 mm	Z
3,000	M3	0,500	2,300	6,000	3,400	2,50	48,000	6,800	36,000	5
4,000	M4	0,700	3,100	6,000	4,500	3,30	48,000	8,800	36,000	5
4,003	M4 x 0,5	0,500	3,100	6,000	4,500	3,50	48,000	8,800	36,000	5
5,000	M5	0,800	4,000	6,000	5,500	4,20	54,000	10,800	36,000	5
5,003	M5 x 0,5	0,500	4,000	6,000	5,500	4,50	54,000	10,800	36,000	5
6,000	M6	1,000	4,700	8,000	6,600	5,00	62,000	13,500	36,000	6
6,003	M6 x 0,5	0,500	4,700	8,000	6,600	5,50	62,000	12,800	36,000	6
6,004	M6 x 0,75	0,750	4,700	8,000	6,600	5,20	62,000	13,100	36,000	6
8,000	M8	1,250	6,300	10,000	9,000	6,80	74,000	18,100	40,000	7
8,005	M8 x 1	1,000	6,300	10,000	9,000	7,00	74,000	17,500	40,000	7
10,000	M10	1,500	7,800	12,000	11,000	8,50	80,000	21,800	45,000	7
10,005	M10 x 1	1,000	7,800	12,000	11,000	9,00	80,000	21,500	45,000	7
10,006	M10 x 1,25	1,250	7,800	12,000	11,000	8,80	80,000	21,900	45,000	7
12,000	M12	1,750	9,500	14,000	13,500	10,20	90,000	25,400	45,000	7
12,005	M12 x 1	1,000	9,500	14,000	13,500	11,00	90,000	25,500	45,000	7
12,007	M12 x 1,5	1,500	9,500	14,000	13,500	10,50	90,000	26,300	45,000	7
14,000	M14	2,000	10,800	16,000	15,500	12,00	102,000	31,000	48,000	7
14,007	M14 x 1,5	1,500	10,800	16,000	15,500	12,50	102,000	30,800	48,000	7
16,000	M16	2,000	12,700	18,000	17,500	14,00	102,000	35,000	48,000	8
16,007	M16 x 1,5	1,500	12,700	18,000	17,500	14,50	102,000	33,800	48,000	8

Gewindefräser ohne Senkfase für Metr. ISO-Gewinde

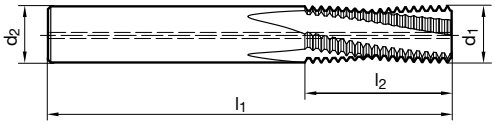
Katalog-Nr. 53860

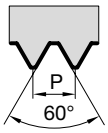
TM SP | 2,5xD | WN | VHM | TiCN | R | HB

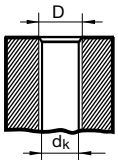
P	M	K	N	S	H
●	○	●	●	○	≤ 55

Arbeitsrichtwerte Seite 182-203

- Gewindefräser ohne Senkfase, mit Spiralnut und innerer Kühlmittelzufuhr mit axialem Austritt
- universelle Verwendung
- extralange Ausführung für Gewindetiefen bis 2,5xD







Code-Nr.	D	P mm	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	Z
6,000	M6	1,000	4,800	6,000	5,00	54,000	16,500	3
8,000	M8	1,250	6,400	8,000	6,80	62,000	21,900	3
10,000	M10	1,500	7,950	10,000	8,50	74,000	26,300	3
12,000	M12	1,750	9,950	10,000	10,20	74,000	32,400	4
14,000	M14	2,000	11,200	12,000	12,00	90,000	37,000	4
16,000	M16	2,000	12,800	14,000	14,00	90,000	43,000	4
20,000	M20	2,500	14,950	16,000	17,50	102,000	48,800	4

Gewindefräser

Gewindefräser ohne Senkfase für Metr. ISO-Gewinde

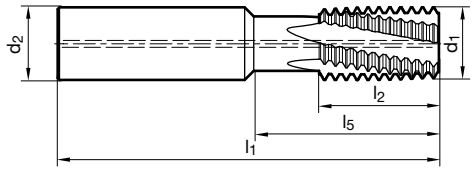
Katalog-Nr. 73830

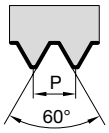
TMU SP | 2xD | WN | VHM | TiCN | R | HB

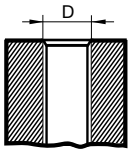
P	M	K	N	S	H
●	●	●	●	●	≤ 55

Arbeitsrichtwerte Seite 182-203

- Gewindefräser ohne Senkfase, mit Spiralnut und innerer Kühlmittelzufuhr mit axialem Austritt
- Universalgewindefräser für Innengewinde M / MF







Code-Nr.	D	P mm	d1 mm	d2 mm	l1 mm	l2 mm	l5 mm	Z
8,050	> 10	0,500	7,950	8,000	64,000	20,000	20,000	4
10,100	> 12	1,000	9,950	10,000	70,000	16,000	25,000	4
10,125	> 14	1,250	9,950	10,000	70,000	16,000	25,000	4
10,150	> 14	1,500	9,950	10,000	70,000	16,000	25,000	4
12,100	> 16	1,000	11,950	12,000	80,000	20,000	31,000	4
12,125	> 16	1,250	11,950	12,000	80,000	20,000	31,000	4
12,150	> 16	1,500	11,950	12,000	80,000	20,000	31,000	4
16,100	> 18	1,000	15,950	16,000	90,000	25,000	40,000	5
16,150	> 20	1,500	15,950	16,000	90,000	25,000	40,000	5
16,200	> 22	2,000	15,950	16,000	90,000	25,000	40,000	5
18,300	> 24	3,000	17,950	18,000	102,000	33,000	50,000	5
20,100	> 24	1,000	19,950	20,000	105,000	33,000	50,000	5
20,150	> 26	1,500	19,950	20,000	105,000	33,000	50,000	5
20,200	> 26	2,000	19,950	20,000	105,000	33,000	50,000	5
20,250	> 26	2,500	19,950	20,000	105,000	33,000	50,000	5
20,300	> 27	3,000	19,950	20,000	105,000	33,000	50,000	5
20,350	> 30	3,500	19,950	20,000	105,000	33,000	50,000	5

Gewindefräser ohne Senkfase für Whitworth-Rohrgewinde

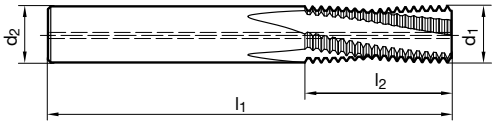
Katalog-Nr. 53831

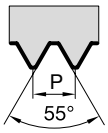
TM SP | 2xD | WN | VHM | TiCN | R | ~HB

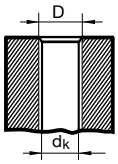
P	M	K	N	S	H
●	○	●	●	○	≤ 55

Arbeitsrichtwerte Seite 182-203

- Gewindefräser ohne Senkfase, mit Spiralnut und innerer Kühlmittelzufuhr mit axialem Austritt
- universelle Verwendung
- für Gewindetiefen bis 2xD







Code-Nr.	D	P G/inch	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	Z
9,728	G1/8	28	7,950	8,000	8,80	64,000	21,300	3
13,157	G1/4	19	10,500	12,000	11,80	90,000	28,700	4
16,662	G3/8	19	13,600	14,000	15,25	90,000	35,400	4

Gewindefräser

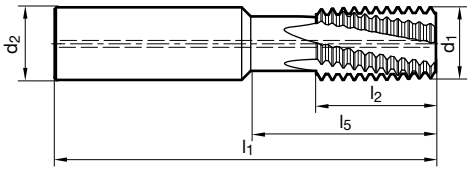
Mehrbereichs-Gewindefräser für Whitworth-Rohrgewinde

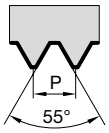
Katalog-Nr. 53832

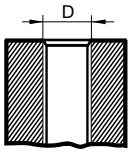
TMU SP | 2xD | WN | VHM | TiCN | R | ~HB

P	M	K	N	S	H	Arbeitsrichtwerte Seite 182-203
●	●	●	●	●	≤ 55	

- Gewindefräser ohne Senkfase, mit Spiralnut und innerer Kühlmittelzufuhr mit axialem Austritt
- Universalgewindefräser für Innengewinde für Whitworth-Rohrgewinde







Code-Nr.	D	P G/inch	d1 mm	d2 mm	l1 mm	l5 mm	l2 mm	Z
10,190	≥ 1/4	19	9,950	10,000	70,000	25,000	16,000	4
16,140	≥ 1/2	14	15,950	16,000	90,000	40,000	25,000	5
20,110	≥ 1	11	19,950	20,000	105,000	50,000	33,000	5

Gewindefräser

Mikro-Gewindefräser für Metrische ISO-Gewinde

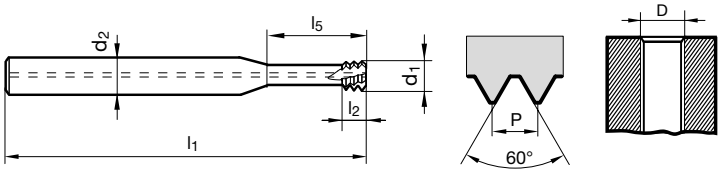
Katalog-Nr. 53892

MTM-NX SP | 2,5xD | WN | VHM | TiCN | L | ~HA

P	M	K	N	S	H
●	●	●	●	●	≤ 55

Arbeitsrichtwerte Seite 182-203

- universelle Verwendung
- M1.6 - M3 mit 2 Kühlrillen
- mit Innenkühlung ab M3.5
- linksschneidende Geometrie
- erhöhte Schneidenzahl für kürzeste Bearbeitungszeiten



Code-Nr.	D	P mm	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	l5 mm	Z
1,600	M1,6	0,350	1,200	3,000	1,25	39,000	1,100	4,000	3
1,800	M1,8	0,350	1,400	3,000	1,45	39,000	1,100	4,500	4
2,000	M2	0,400	1,550	3,000	1,60	39,000	1,200	5,000	4
2,500	M2,5	0,450	1,950	3,000	2,05	39,000	1,400	6,500	4
3,000	M3	0,500	2,400	3,000	2,50	39,000	1,500	8,000	5
3,500	M3,5	0,600	2,800	6,000	2,90	58,000	1,800	9,000	5
4,000	M4	0,700	3,200	6,000	3,30	58,000	2,100	11,000	5
5,000	M5	0,800	4,000	6,000	4,20	58,000	2,400	13,500	6
6,000	M6	1,000	4,800	6,000	5,00	58,000	3,000	16,000	6
8,000	M8	1,250	5,950	6,000	6,80	58,000	3,800	21,000	7
10,000	M10	1,500	7,800	8,000	8,50	73,000	4,500	26,000	7
12,000	M12	1,750	9,000	10,000	10,20	84,000	5,300	31,000	7
16,000	M16	2,000	11,800	12,000	14,00	90,000	6,000	41,000	8
20,000	M20	2,500	15,000	16,000	17,50	105,000	7,500	51,000	8

Gewindefräser

Mikro-Gewindefräser für Metrische ISO-Gewinde

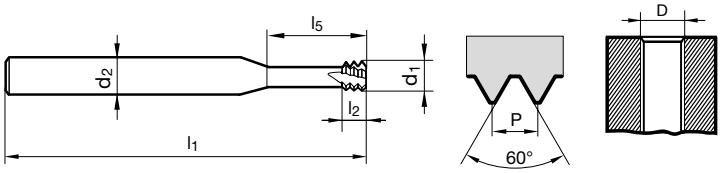
Katalog-Nr. 53840

TM SP | 3xD | WN | VHM | TiCN | R | ~HA

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 182-203

- universelle Verwendung
- lange Ausführung



Code-Nr.	D	P mm	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	l5 mm	Z
1,600	M1,6	0,350	1,200	3,000	1,25	39,000	1,100	4,800	3
1,800	M1,8	0,350	1,400	3,000	1,45	39,000	1,100	5,400	3
2,000	M2	0,400	1,550	3,000	1,60	39,000	1,200	6,000	4
2,500	M2,5	0,450	1,950	3,000	2,05	39,000	1,400	7,500	4
3,000	M3	0,500	2,400	6,000	2,50	58,000	1,500	9,500	4
3,500	M3,5	0,600	2,800	6,000	2,90	58,000	1,800	11,000	4
4,000	M4	0,700	3,200	6,000	3,30	58,000	2,100	12,500	4
5,000	M5	0,800	4,000	6,000	4,20	58,000	2,400	16,000	4
6,000	M6	1,000	4,800	6,000	5,00	58,000	3,000	20,000	4
8,000	M8	1,250	5,950	6,000	6,80	58,000	3,800	24,000	4
10,000	M10	1,500	7,800	8,000	8,50	73,000	4,500	33,000	4
12,000	M12	1,750	9,000	10,000	10,20	84,000	5,300	38,000	4
16,000	M16	2,000	11,800	12,000	14,00	84,000	6,000	35,000	5

Gewindefräser

Mikro-Gewindefräser für Metrische ISO-Gewinde

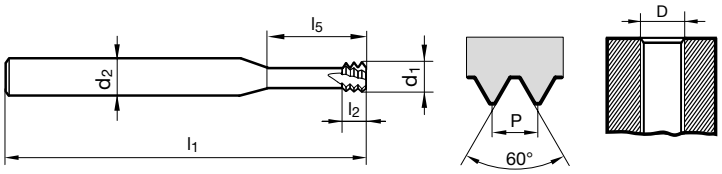
Katalog-Nr. 53850

TM SP | 3xD | WN | VHM | TiAlN | R | ~HA

P	M	K	N	S	H
				○	●

Arbeitsrichtwerte Seite 182-203

- für die Hartbearbeitung 45-65 HRC
- lange Ausführung



Code-Nr.	D	P mm	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	l5 mm	Z
2,000	M2	0,400	1,550	3,000	1,60	39,000	1,200	6,000	4
2,500	M2,5	0,450	1,950	3,000	2,05	39,000	1,400	7,500	4
3,000	M3	0,500	2,350	6,000	2,50	58,000	1,500	9,500	4
4,000	M4	0,700	3,100	6,000	3,30	58,000	2,100	12,500	4
5,000	M5	0,800	3,800	6,000	4,20	58,000	2,400	16,000	4
6,000	M6	1,000	4,800	6,000	5,00	58,000	3,000	20,000	4
8,000	M8	1,250	5,950	6,000	6,80	58,000	3,800	24,000	4
10,000	M10	1,500	7,800	8,000	8,50	64,000	4,500	23,000	4
12,000	M12	1,750	9,000	10,000	10,20	73,000	5,300	26,000	5

Gewindefräser

Mikro-Gewindefräser für Whitworth-Rohrgewinde

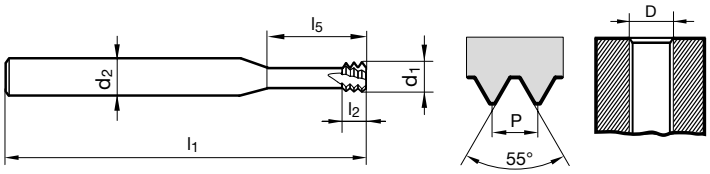
Katalog-Nr. 53841

TM SP | 3xD | WN | VHM | TiCN | R | ~HA

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 182-203

- universelle Verwendung
- lange Ausführung

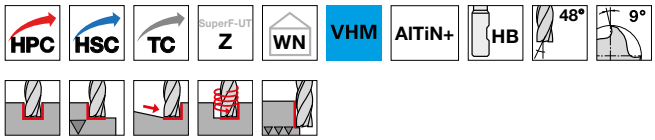


Code-Nr.	D	P G/inch	d1 mm	d2 mm	dk mm	l1 mm	l2 mm	l5 mm	Z
9,728	G1/16-G1/8	28	6,200	8,000	8,80	64,000	2,700	19,500	4
16,662	G1/4-G3/8	19	9,950	10,000	15,25	73,000	4,000	25,000	4
30,201	G1/2-G7/8	14	11,950	12,000	28,25	84,000	5,400	37,000	4
59,614	G1-G2	11	15,950	16,000	57,00	105,000	6,900	44,000	5

SuperF-UT-Fräser

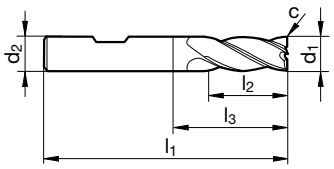
SuperF-UT-Fräser Z

Katalog-Nr. 54577



P	M	K	N	S	H
●	●			●	

Arbeitsrichtwerte Seite 204-217



- besonders stabil durch Kernsprung
- universell einsetzbar
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Zentrumschnitt
- ungleiche Teilung
- HPC-Bearbeitung in zähen, niedrig- und hochlegierten Stählen und in schwer bearbeitbaren Sonderwerkstoffen
- auch als Satz 78882 1.000 und 78882 2.000 erhältlich

d1 h10 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
3,000	6,000	57,000	8,000	10,900	0,060	4	**3,000**
4,000	6,000	57,000	11,000	13,900	0,080	4	**4,000**
5,000	6,000	57,000	13,000	15,900	0,100	4	**5,000**
6,000	6,000	57,000	15,000	21,000	0,120	4	**6,000**
8,000	8,000	63,000	20,000	27,000	0,160	4	**8,000**
10,000	10,000	72,000	24,000	32,000	0,200	4	**10,000**
12,000	12,000	83,000	28,000	38,000	0,240	4	**12,000**
16,000	16,000	92,000	36,000	44,000	0,320	4	**16,000**
20,000	20,000	104,000	45,000	54,000	0,400	4	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			$a_p = l2$		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	$a_p = l2$				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

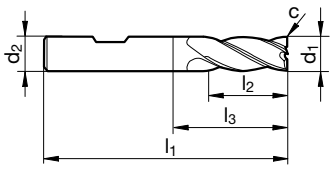
SuperF-UT-Fräser ZS

Katalog-Nr. 54578

HPC | HSC | TC | SuperF-UT ZS | WN | VHM | AlTiN+ | HB | 48° | 9°

P	M	K	N	S	H
●	●			●	

Arbeitsrichtwerte Seite 204-217



- besonders stabil durch Kernsprung
- mit Spanteiler
- universell einsetzbar
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Zentrumschnitt
- ungleiche Teilung
- HPC-Bearbeitung in zähen, niedrig- und hochlegierten Stählen und in schwer bearbeitbaren Sonderwerkstoffen

d1 h10 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
3,000	6,000	57,000	12,000	14,900	0,060	4	**3,000**
4,000	6,000	65,000	16,000	18,900	0,080	4	**4,000**
5,000	6,000	65,000	20,000	22,900	0,100	4	**5,000**
6,000	6,000	65,000	24,000	29,000	0,120	4	**6,000**
8,000	8,000	75,000	32,000	39,000	0,160	4	**8,000**
10,000	10,000	90,000	40,000	50,000	0,200	4	**10,000**
12,000	12,000	100,000	46,000	55,000	0,240	4	**12,000**
16,000	16,000	108,000	55,000	60,000	0,320	4	**16,000**
20,000	20,000	126,000	65,000	76,000	0,400	4	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			$a_p = l2$		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	$a_p = l2$				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

SuperF-UT-Fräser ZS-r

Katalog-Nr. 54555

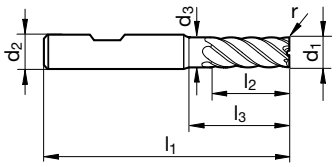
HPC | HSC | TC | SuperF-UT ZS-r | WN | VHM | AlTiN+ | HB | 38° | 9°

R ±0,05

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 204-217

- mit Spanteiler
- universell einsetzbar
- Werkstoffe bis 1400 N/mm²
- mit definierten Eckradien
- ohne Zentrumschnitt
- ungleiche Teilung
- Halsfreischliff



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
6,000	6,000	5,700	65,000	20,000	28,000	0,200	5	**6,002**
6,000	6,000	5,700	65,000	20,000	28,000	0,500	5	**6,005**
6,000	6,000	5,700	65,000	20,000	28,000	1,000	5	**6,010**
8,000	8,000	7,700	75,000	26,000	38,000	0,300	5	**8,003**
8,000	8,000	7,700	75,000	26,000	38,000	0,500	5	**8,005**
8,000	8,000	7,700	75,000	26,000	38,000	1,000	5	**8,010**
8,000	8,000	7,700	75,000	26,000	38,000	1,500	5	**8,015**
10,000	10,000	9,500	80,000	32,000	38,000	0,500	5	**10,005**
10,000	10,000	9,500	80,000	32,000	38,000	1,000	5	**10,010**
10,000	10,000	9,500	80,000	32,000	38,000	1,500	5	**10,015**
10,000	10,000	9,500	80,000	32,000	38,000	2,000	5	**10,020**
12,000	12,000	11,500	93,000	40,000	46,000	0,500	5	**12,005**
12,000	12,000	11,500	93,000	40,000	46,000	1,000	5	**12,010**
12,000	12,000	11,500	93,000	40,000	46,000	1,500	5	**12,015**
12,000	12,000	11,500	93,000	40,000	46,000	2,000	5	**12,020**
16,000	16,000	15,500	108,000	50,000	58,000	0,500	5	**16,005**
16,000	16,000	15,500	108,000	50,000	58,000	1,000	5	**16,010**
16,000	16,000	15,500	108,000	50,000	58,000	1,500	5	**16,015**
16,000	16,000	15,500	108,000	50,000	58,000	2,000	5	**16,020**
16,000	16,000	15,500	108,000	50,000	58,000	3,000	5	**16,030**
20,000	20,000	19,500	126,000	62,000	74,000	1,000	5	**20,010**
20,000	20,000	19,500	126,000	62,000	74,000	1,500	5	**20,015**
20,000	20,000	19,500	126,000	62,000	74,000	2,000	5	**20,020**
20,000	20,000	19,500	126,000	62,000	74,000	3,000	5	**20,030**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD			a_p = l2					a_e max = 0,02xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28	**360**	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**270**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**240**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18	**120**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15	**60**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21	**120**	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

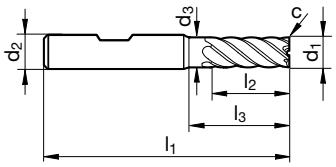
SuperF-UT-Fräser ZS-7

Katalog-Nr. 54581

HPC | HSC | TC | SuperF-UT ZS-7 | WN | VHM | AlTiN+ | HB | 32° | 9°

P	M	K	N	S	H
●	●	●	○	●	

Arbeitsrichtwerte Seite 204-217



- Halsfreischliff
- mit Spanteiler
- universell einsetzbar
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- ohne Zentrumschnitt
- ungleiche Teilung
- HPC-Bearbeitung in zähen, niedrig- und hochlegierten Stählen und in schwer bearbeitbaren Sonderwerkstoffen

d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
6,000	6,000	5,700	65,000	20,000	28,000	0,120	7	**6,000**
8,000	8,000	7,700	75,000	26,000	38,000	0,160	7	**8,000**
10,000	10,000	9,500	80,000	32,000	38,000	0,200	7	**10,000**
12,000	12,000	11,500	93,000	40,000	46,000	0,240	7	**12,000**
16,000	16,000	15,500	108,000	50,000	58,000	0,320	7	**16,000**
20,000	20,000	19,500	126,000	62,000	74,000	0,400	7	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

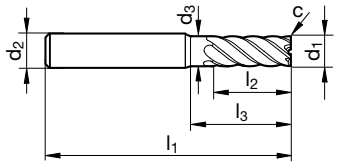
SuperF-UT-Fräser N-5

Katalog-Nr. 54583

HPC | HSC | TC | SuperF-UT N-5 | WN | VHM | TiAlN | HA | 45° | 7°

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217



- größtmögliche Vorteile bei Schlicht- und Semischrupp-Operationen speziell unter HPC Bedingungen
- ungleiche Teilung
- bis 1600 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt

d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
4,000	6,000	3,800	57,000	11,000	18,000	0,050	5	**4,000**
5,000	6,000	4,800	57,000	13,000	18,000	0,050	5	**5,000**
6,000	6,000	5,700	57,000	13,000	20,000	0,050	5	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	0,100	5	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,100	5	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,100	5	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,150	5	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,150	5	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD			a_p = l2				a_e max = 0,02xD		
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28	**360**	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**270**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**240**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18	**120**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15	**60**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21	**120**	0,013	0,026	0,035	0,050	0,06	0,08	0,10
K	≤ 240 HB	**300**	0,038	0,076	0,101	0,150	0,18	0,24	0,30	**320**	0,018	0,036	0,048	0,072	0,09	0,11	0,14
	≥ 240 HB	**260**	0,035	0,069	0,092	0,127	0,15	0,20	0,25	**280**	0,017	0,033	0,044	0,061	0,07	0,10	0,12
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37	**1000**	0,021	0,043	0,057	0,088	0,11	0,14	0,18
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28	**460**	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser N-5

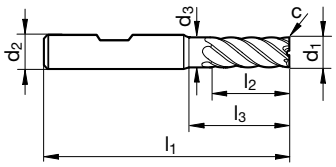
Katalog-Nr. 54584

HPC | HSC | TC | SuperF-UT N-5 | WN | VHM | TiAlN | HB | 45° | 7°

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217

- größtmögliche Vorteile bei Schlicht- und Semischrupp-Operationen speziell unter HPC Bedingungen
- ungleiche Teilung
- bis 1600 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
4,000	6,000	3,800	57,000	11,000	18,000	0,050	5	**4,000**
5,000	6,000	4,800	57,000	13,000	18,000	0,050	5	**5,000**
6,000	6,000	5,700	57,000	13,000	20,000	0,050	5	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	0,100	5	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,100	5	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,100	5	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,150	5	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,150	5	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21
K	≤ 240 HB	**300**	0,038	0,076	0,101	0,150	0,18	0,24	0,30
	≥ 240 HB	**260**	0,035	0,069	0,092	0,127	0,15	0,20	0,25
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10
320	0,018	0,036	0,048	0,072	0,09	0,11	0,14
280	0,017	0,033	0,044	0,061	0,07	0,10	0,12
1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
460	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser FS²

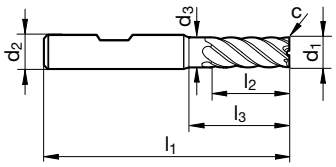
Katalog-Nr. 64560

HPC | HSC | TC | SuperF-UT FS² | WN | VHM | TiAlZrN | HB | 44° 45° 46° | 7°

P	M	K	N	S	H
○	●	○	●	●	○

Arbeitsrichtwerte Seite 204-217

- Halsfreischliff
- Zentrumschnitt
- größtmögliche Vorteile bei Schlicht- und Semischrupp-Operationen speziell unter HPC Bedingungen
- zum Feinschlichten in Werkstoffen bis 50 HRC
- Mikroeckenschutz
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
8,000	8,000	7,700	63,000	19,000	26,000	0,100	6	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,100	6	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,100	6	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,150	6	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,150	6	**20,000**

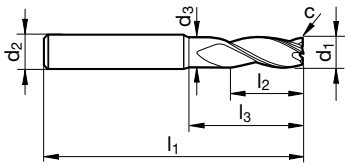
ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28

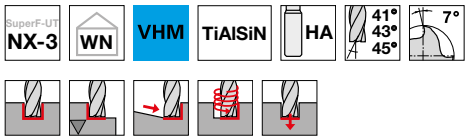
v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10
1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
460	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser NX-3

Katalog-Nr. 54586





P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217

- angepasste Stirn- und Nutengeometrie für höchste Schnittwerte und sehr gute Spanabfuhr
- extrem steile Tauchwinkel bis 45° möglich
- hohe Standzeiten durch hochharte Beschichtung
- 3-Schneider mit vergrößerten Spanräumen
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt

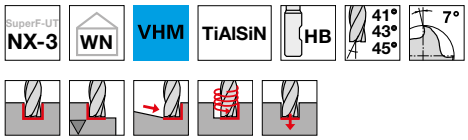
d1 e8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
3,000	6,000	2,800	57,000	8,000	15,000	0,050	3	**3,000**
3,500	6,000	3,300	57,000	10,000	15,000	0,050	3	**3,500**
3,700	6,000	3,500	57,000	11,000	15,000	0,060	3	**3,700**
4,000	6,000	3,800	57,000	11,000	18,000	0,060	3	**4,000**
4,500	6,000	4,300	57,000	11,000	18,000	0,070	3	**4,500**
4,700	6,000	4,500	57,000	13,000	18,000	0,070	3	**4,700**
5,000	6,000	4,800	57,000	13,000	18,000	0,080	3	**5,000**
5,500	6,000	5,300	57,000	13,000	19,400	0,080	3	**5,500**
5,700	6,000	5,500	57,000	13,000	19,600	0,090	3	**5,700**
6,000	6,000	5,700	57,000	13,000	20,000	0,090	3	**6,000**
6,500	8,000	6,200	63,000	16,000	24,400	0,100	3	**6,500**
7,000	8,000	6,700	63,000	16,000	24,900	0,110	3	**7,000**
7,500	8,000	7,200	63,000	19,000	25,300	0,110	3	**7,500**
8,000	8,000	7,700	63,000	19,000	26,000	0,120	3	**8,000**
8,500	10,000	8,200	72,000	19,000	29,400	0,130	3	**8,500**
9,000	10,000	8,700	72,000	19,000	29,900	0,140	3	**9,000**
9,500	10,000	9,200	72,000	22,000	30,300	0,140	3	**9,500**
10,000	10,000	9,500	72,000	22,000	30,000	0,150	3	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,180	3	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,190	3	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,240	3	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD			a_p = 1,5xD					$a_{e\ max}$ = 0,33xD	
P	≤ 850 N/mm²	**270**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**350**	0,021	0,032	0,042	0,063	0,075	0,100	0,125
	≥ 850 N/mm²	**180**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**260**	0,018	0,027	0,036	0,059	0,070	0,094	0,117
M	≤ 750 N/mm²	**120**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**160**	0,018	0,027	0,036	0,059	0,070	0,094	0,117
	≥ 750 N/mm²	**80**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**120**	0,019	0,029	0,038	0,060	0,072	0,096	0,120
S	Ti-Basis	**60**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**110**	0,017	0,025	0,033	0,052	0,062	0,083	0,104
K	≤ 240 HB	**150**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**190**	0,021	0,032	0,042	0,063	0,075	0,100	0,125
N	≥ 7 % Si	**340**	0,018	0,027	0,036	0,055	0,066	0,088	0,110	**440**	0,023	0,034	0,045	0,069	0,083	0,110	0,138

SuperF-UT-Fräser

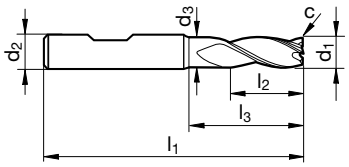
SuperF-UT-Fräser NX-3

Katalog-Nr. 54587



P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217



- angepasste Stirn- und Nutengeometrie für höchste Schnittwerte und sehr gute Spanabfuhr
- extrem steile Tauchwinkel bis 45° möglich
- hohe Standzeiten durch hochharte Beschichtung
- 3-Schneider mit vergrößerten Spanräumen
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt

d1 e8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
3,000	6,000	2,800	57,000	8,000	15,000	0,050	3	**3,000**
3,500	6,000	3,300	57,000	10,000	15,000	0,050	3	**3,500**
3,700	6,000	3,500	57,000	11,000	15,000	0,060	3	**3,700**
4,000	6,000	3,800	57,000	11,000	18,000	0,060	3	**4,000**
4,500	6,000	4,300	57,000	11,000	18,000	0,070	3	**4,500**
4,700	6,000	4,500	57,000	13,000	18,000	0,070	3	**4,700**
5,000	6,000	4,800	57,000	13,000	18,000	0,080	3	**5,000**
5,500	6,000	5,300	57,000	13,000	19,400	0,080	3	**5,500**
5,700	6,000	5,500	57,000	13,000	19,600	0,090	3	**5,700**
6,000	6,000	5,700	57,000	13,000	20,000	0,090	3	**6,000**
6,500	8,000	6,200	63,000	16,000	24,400	0,100	3	**6,500**
7,000	8,000	6,700	63,000	16,000	24,900	0,110	3	**7,000**
7,500	8,000	7,200	63,000	19,000	25,300	0,110	3	**7,500**
8,000	8,000	7,700	63,000	19,000	26,000	0,120	3	**8,000**
8,500	10,000	8,200	72,000	19,000	29,400	0,130	3	**8,500**
9,000	10,000	8,700	72,000	19,000	29,900	0,140	3	**9,000**
9,500	10,000	9,200	72,000	22,000	30,300	0,140	3	**9,500**
10,000	10,000	9,500	72,000	22,000	30,000	0,150	3	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,180	3	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,190	3	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,240	3	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD			a_p = 1,5xD					$a_{e\ max}$ = 0,33xD	
P	≤ 850 N/mm²	**270**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**350**	0,021	0,032	0,042	0,063	0,075	0,100	0,125
	≥ 850 N/mm²	**180**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**260**	0,018	0,027	0,036	0,059	0,070	0,094	0,117
M	≤ 750 N/mm²	**120**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**160**	0,018	0,027	0,036	0,059	0,070	0,094	0,117
	≥ 750 N/mm²	**80**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**120**	0,019	0,029	0,038	0,060	0,072	0,096	0,120
S	Ti-Basis	**60**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**110**	0,017	0,025	0,033	0,052	0,062	0,083	0,104
K	≤ 240 HB	**150**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**190**	0,021	0,032	0,042	0,063	0,075	0,100	0,125
N	≥ 7 % Si	**340**	0,018	0,027	0,036	0,055	0,066	0,088	0,110	**440**	0,023	0,034	0,045	0,069	0,083	0,110	0,138

SuperF-UT-Fräser

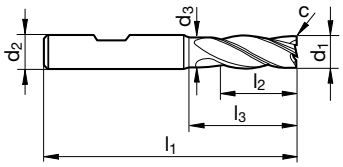
SuperF-UT-Fräser NX

Katalog-Nr. 54589

HPC | HSC | SuperF-UT NX | DIN 6527K | VHM | TiAlSiN | HB | 36° 38° 37° | 7°

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217



- kurze stabile Ausführung
- angepasste Stirn- und Nutengeometrie für höchste Schnittwerte und sehr gute Spanabfuhr
- extrem steile Tauchwinkel bis 45° möglich
- hohe Standzeiten durch hochharte Beschichtung
- hohe Prozesssicherheit bei gleichzeitiger Reduzierung der Bearbeitungszeiten
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt

d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
3,000	6,000	2,800	50,000	5,000	12,000	0,030	4	**3,000**
3,700	6,000	3,500	54,000	8,000	12,000	0,040	4	**3,700**
4,000	6,000	3,800	54,000	8,000	15,000	0,040	4	**4,000**
4,700	6,000	4,500	54,000	9,000	15,000	0,050	4	**4,700**
5,000	6,000	4,800	54,000	9,000	15,000	0,050	4	**5,000**
5,700	6,000	5,500	54,000	10,000	16,600	0,060	4	**5,700**
6,000	6,000	5,700	54,000	10,000	17,000	0,060	4	**6,000**
7,000	8,000	6,700	58,000	11,000	19,900	0,070	4	**7,000**
7,700	8,000	7,400	58,000	12,000	20,500	0,080	4	**7,700**
8,000	8,000	7,700	58,000	12,000	21,000	0,080	4	**8,000**
9,000	10,000	8,700	66,000	13,000	23,900	0,090	4	**9,000**
9,700	10,000	9,400	66,000	14,000	24,500	0,100	4	**9,700**
10,000	10,000	9,500	66,000	14,000	24,000	0,100	4	**10,000**
11,700	12,000	11,200	73,000	16,000	25,300	0,120	4	**11,700**
12,000	12,000	11,500	73,000	16,000	26,000	0,120	4	**12,000**
15,600	16,000	15,100	82,000	22,000	31,200	0,160	4	**15,600**
16,000	16,000	15,500	82,000	22,000	32,000	0,160	4	**16,000**
19,000	20,000	18,500	92,000	26,000	38,700	0,190	4	**19,000**
20,000	20,000	19,500	92,000	26,000	40,000	0,200	4	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD	
P	≤ 850 N/mm²	**270**	0,017	0,025	0,034	0,050	0,060	0,080	0,100
	≥ 850 N/mm²	**180**	0,014	0,021	0,028	0,045	0,054	0,072	0,090
M	≤ 750 N/mm²	**120**	0,014	0,021	0,028	0,045	0,054	0,072	0,090
	≥ 750 N/mm²	**80**	0,013	0,019	0,026	0,040	0,048	0,064	0,080
S	Ti-Basis	**60**	0,013	0,019	0,026	0,040	0,048	0,064	0,080
K	≤ 240 HB	**150**	0,017	0,025	0,034	0,050	0,060	0,080	0,100
N	≥ 7 % Si	**340**	0,018	0,027	0,036	0,055	0,066	0,088	0,110

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2			HPC		a_e max = 0,20xD	
450	0,027	0,040	0,054	0,080	0,10	0,13	0,16
300	0,022	0,034	0,045	0,072	0,09	0,12	0,14
200	0,022	0,034	0,045	0,072	0,09	0,12	0,14
140	0,020	0,031	0,041	0,064	0,08	0,10	0,13
110	0,020	0,031	0,041	0,064	0,08	0,10	0,13
250	0,027	0,040	0,054	0,080	0,10	0,13	0,16
570	0,029	0,043	0,058	0,088	0,11	0,14	0,18

SuperF-UT-Fräser

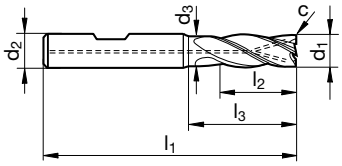
SuperF-UT-Fräser NX-IK

Katalog-Nr. 54585

HPC | HSC | SuperF-UT NX-IK | DIN 6527 L | VHM | TiAlSiN | HB | 36° 38° 37° | 7°

P	M	K	N	S	H
●	●	●	●	●	

Arbeitsrichtwerte Seite 204-217



- angepasste Schneidengeometrie und Beschichtung
- mit Innenkühlung: radiale und axiale Austritte
- extrem steile Tauchwinkel bis 45° möglich
- hohe Standzeiten durch hochharte Beschichtung
- hohe Prozesssicherheit bei gleichzeitiger Reduzierung der Bearbeitungszeiten
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung

d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
6,000	6,000	5,700	57,000	13,000	20,000	0,060	4	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	0,080	4	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,100	4	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,120	4	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,160	4	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,200	4	**20,000**
25,000	25,000	24,000	121,000	45,000	63,000	0,250	4	**25,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			4	6	8	10	12	16	20		4	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD			a_p = 1,0xD					a_e = 1,0xD	
P	≤ 850 N/mm²	**270**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**270**	0,014	0,021	0,028	0,040	0,048	0,064	0,080
	≥ 850 N/mm²	**180**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**180**	0,008	0,012	0,016	0,025	0,030	0,040	0,050
M	≤ 750 N/mm²	**120**	0,014	0,021	0,028	0,045	0,054	0,072	0,090	**90**	0,007	0,011	0,014	0,023	0,027	0,036	0,045
	≥ 750 N/mm²	**80**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**60**	0,006	0,010	0,013	0,020	0,024	0,032	0,040
S	Ti-Basis	**60**	0,013	0,019	0,026	0,040	0,048	0,064	0,080	**50**	0,006	0,010	0,013	0,020	0,024	0,032	0,040
K	≤ 240 HB	**150**	0,017	0,025	0,034	0,050	0,060	0,080	0,100	**150**	0,014	0,021	0,028	0,040	0,048	0,064	0,080
N	≥ 7 % Si	**340**	0,018	0,027	0,036	0,055	0,066	0,088	0,110	**340**	0,014	0,021	0,028	0,040	0,048	0,064	0,080

SuperF-UT-Fräser

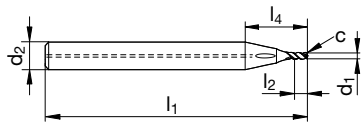
SuperF-UT-Fräser NX Micro

Katalog-Nr. 54594

P	M	K	N	S	H
●	●	●	●	●	○

Arbeitsrichtwerte
Seite 204-217

- für extreme Schnittwerte und Zerspanleistung
- mit Innenkühlung: Peripheriekühlung 4 bzw. 6 Austritte
- Zentrumschnitt
- verbesserte Stirngeometrie
- Schneidenlänge 2,5xD



d1 h8 mm	d2 h5 mm	l1 mm	l2 mm	l4 mm	c mm x 45°	Z	**Code-Nr.**
0,800	4,000	38,000	2,000	9,500	0,016	3	**0,800**
1,000	4,000	38,000	2,500	9,300	0,020	3	**1,000**
1,200	4,000	38,000	3,000	9,400	0,024	3	**1,200**
1,500	4,000	45,000	3,750	9,700	0,030	3	**1,500**
1,800	4,000	45,000	4,500	10,200	0,036	3	**1,800**
2,000	6,000	50,000	5,000	14,600	0,040	3	**2,000**
2,200	6,000	50,000	5,500	14,900	0,044	3	**2,200**
2,500	6,000	50,000	6,250	15,300	0,050	3	**2,500**
2,800	6,000	50,000	7,000	15,900	0,056	3	**2,800**
3,000	6,000	50,000	7,500	16,200	0,060	3	**3,000**

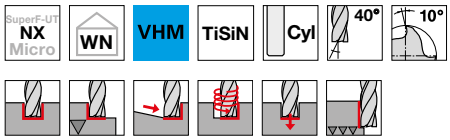
ISO	Härte	a_p	Ø1,0		Ø1,5		Ø2,0		Ø2,5		Ø3,0	
			v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
P	≤850 N/mm²	**1,00xØ**	140	0,009	168	0,014	182	0,018	182	0,023	196	0,027
	≥850 N/mm²	**0,75xØ**	140	0,006	168	0,009	182	0,012	182	0,015	196	0,018
M	≤750 N/mm²	**1,00xØ**	140	0,008	168	0,012	182	0,016	182	0,020	196	0,024
	≥750 N/mm²	**0,75xØ**	90	0,006	108	0,009	117	0,012	117	0,015	126	0,018
S	Ni-Basis	**0,50xØ**	60	0,004	72	0,005	78	0,007	78	0,009	84	0,011
	Ti-Basis	**0,75xØ**	100	0,008	120	0,011	130	0,015	130	0,019	140	0,023
K	≤240 HB	**1,00xØ**	120	0,007	144	0,011	156	0,014	156	0,018	168	0,021
	≥240 HB	**1,00xØ**	100	0,006	120	0,009	130	0,012	130	0,016	140	0,019
N	Al	**1,00xØ**	170	0,012	204	0,018	221	0,024	221	0,030	238	0,036
	NE	**1,00xØ**	125	0,011	150	0,017	162,5	0,022	162,5	0,028	175	0,033

a_e	a_p	Ø1,0		Ø1,5		Ø2,0		Ø2,5		Ø3,0	
		v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
0,25xØ	**2,0xØ**	170	0,014	204	0,021	221	0,028	221	0,035	238	0,043
0,20xØ	**2,0xØ**	170	0,009	204	0,014	221	0,019	221	0,024	238	0,028
0,25xØ	**2,0xØ**	170	0,013	204	0,019	221	0,025	221	0,032	238	0,038
0,20xØ	**2,0xØ**	105	0,010	126	0,014	137	0,019	137	0,024	147	0,029
0,15xØ	**2,0xØ**	70	0,006	84	0,009	91	0,012	91	0,014	98	0,017
0,20xØ	**2,0xØ**	115	0,012	138	0,018	150	0,024	150	0,030	161	0,035
0,25xØ	**2,0xØ**	145	0,011	174	0,017	189	0,022	189	0,028	203	0,033
0,25xØ	**2,0xØ**	120	0,010	144	0,015	156	0,020	156	0,024	168	0,029
0,25xØ	**2,0xØ**	200	0,019	240	0,028	260	0,038	260	0,047	280	0,057
0,25xØ	**2,0xØ**	150	0,017	180	0,026	195	0,035	195	0,044	210	0,052

SuperF-UT-Fräser

SuperF-UT-Fräser NX Micro

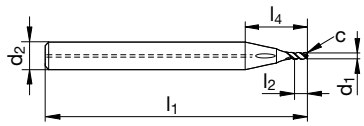
Katalog-Nr. 54595



P	M	K	N	S	H
●	●	●	●	●	○

Arbeitsrichtwerte
Seite 204-217

- für extreme Schnittwerte und Zerspanleistung
- mit Innenkühlung: Peripheriekühlung 4 bzw. 6 Austritte
- Zentrumschnitt
- verbesserte Stirngeometrie
- Schneidenlänge 5xD



d1 h8 mm	d2 h5 mm	l1 mm	l2 mm	l4 mm	c mm x 45°	Z	**Code-Nr.**
1,000	4,000	45,000	5,000	11,800	0,020	3	**1,000**
1,500	4,000	50,000	7,500	13,500	0,030	3	**1,500**
2,000	6,000	57,000	10,000	19,600	0,040	3	**2,000**
2,500	6,000	57,000	12,500	21,500	0,050	3	**2,500**
3,000	6,000	57,000	15,000	23,700	0,060	3	**3,000**

ISO	Härte	a_p	Ø1,0		Ø1,5		Ø2,0		Ø2,5		Ø3,0		a_e	a_p	Ø1,0		Ø1,5		Ø2,0		Ø2,5		Ø3,0	
			v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z			v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z	v_c	f_z
P	≤850 N/mm²	**0,50xØ**	112	0,008	134	0,012	146	0,016	146	0,020	157	0,024	**0,10xØ**	**5,0xØ**	134	0,013	161	0,019	174	0,026	174	0,032	188	0,038
	≥850 N/mm²	**0,25xØ**	112	0,005	134	0,008	146	0,011	146	0,014	157	0,016	**0,08xØ**	**5,0xØ**	134	0,009	161	0,013	174	0,017	174	0,021	188	0,026
M	≤750 N/mm²	**0,25xØ**	112	0,007	134	0,011	146	0,014	146	0,018	157	0,022	**0,10xØ**	**5,0xØ**	134	0,011	161	0,017	174	0,023	174	0,028	188	0,034
	≥750 N/mm²	**0,25xØ**	71	0,006	85	0,008	92	0,011	92	0,014	99	0,017	**0,05xØ**	**5,0xØ**	86	0,009	103	0,013	112	0,017	112	0,022	120	0,026
S	Ni-Basis	**0,25xØ**	46	0,003	55	0,005	60	0,007	60	0,008	64	0,010	**0,05xØ**	**5,0xØ**	55	0,005	66	0,008	72	0,010	72	0,013	77	0,016
	Ti-Basis	**0,25xØ**	72	0,007	86	0,010	94	0,014	94	0,017	101	0,020	**0,08xØ**	**5,0xØ**	86	0,011	103	0,016	112	0,021	112	0,027	120	0,032
K	≤240 HB	**0,50xØ**	96	0,006	115	0,009	125	0,013	125	0,016	134	0,019	**0,10xØ**	**5,0xØ**	115	0,010	138	0,015	150	0,020	150	0,025	161	0,030
	≥240 HB	**0,50xØ**	80	0,006	96	0,008	104	0,011	104	0,014	112	0,017	**0,10xØ**	**5,0xØ**	96	0,009	115	0,013	125	0,018	125	0,022	134	0,026
N	Al	**0,50xØ**	136	0,011	163	0,016	177	0,022	177	0,027	190	0,032	**0,15xØ**	**5,0xØ**	163	0,017	196	0,026	212	0,034	212	0,043	228	0,051
	NE	**0,50xØ**	100	0,010	120	0,015	130	0,020	130	0,025	140	0,030	**0,12xØ**	**5,0xØ**	120	0,016	144	0,023	156	0,031	156	0,039	168	0,047

SuperF-UT-Fräser

SuperF-UT-Fräser Ti

Katalog-Nr. 54560

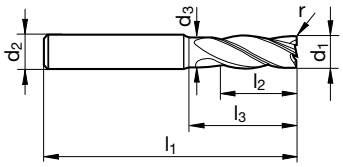
HPC | HSC | SuperF-UT Ti | DIN 6527 L | VHM | ZrN | HA | 35° 38° | 5°

R ±0,05

P	M	K	N	S	H
○	○			●	

Arbeitsrichtwerte Seite 204-217

- optimierte Schneidkantenausführung für hochfeste Titanlegierungen und Sonderwerkstoffe
- mit definierten Eckradien
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
6,000	6,000	5,700	57,000	13,000	20,000	0,500	4	**6,005**
6,000	6,000	5,700	57,000	13,000	20,000	0,800	4	**6,008**
6,000	6,000	5,700	57,000	13,000	20,000	1,000	4	**6,010**
6,000	6,000	5,700	57,000	13,000	20,000	1,500	4	**6,015**
6,000	6,000	5,700	57,000	13,000	20,000	2,000	4	**6,020**
8,000	8,000	7,700	63,000	19,000	26,000	0,500	4	**8,005**
8,000	8,000	7,700	63,000	19,000	26,000	0,800	4	**8,008**
8,000	8,000	7,700	63,000	19,000	26,000	1,000	4	**8,010**
8,000	8,000	7,700	63,000	19,000	26,000	1,500	4	**8,015**
8,000	8,000	7,700	63,000	19,000	26,000	2,000	4	**8,020**
10,000	10,000	9,500	72,000	22,000	30,000	0,500	4	**10,005**
10,000	10,000	9,500	72,000	22,000	30,000	0,800	4	**10,008**
10,000	10,000	9,500	72,000	22,000	30,000	1,000	4	**10,010**
10,000	10,000	9,500	72,000	22,000	30,000	1,500	4	**10,015**
10,000	10,000	9,500	72,000	22,000	30,000	2,000	4	**10,020**
12,000	12,000	11,500	83,000	26,000	36,000	0,500	4	**12,005**
12,000	12,000	11,500	83,000	26,000	36,000	0,800	4	**12,008**
12,000	12,000	11,500	83,000	26,000	36,000	1,000	4	**12,010**
12,000	12,000	11,500	83,000	26,000	36,000	1,500	4	**12,015**
12,000	12,000	11,500	83,000	26,000	36,000	2,000	4	**12,020**
12,000	12,000	11,500	83,000	26,000	36,000	2,500	4	**12,025**
12,000	12,000	11,500	83,000	26,000	36,000	3,000	4	**12,030**
12,000	12,000	11,500	83,000	26,000	36,000	4,000	4	**12,040**
16,000	16,000	15,500	92,000	32,000	42,000	0,500	4	**16,005**
16,000	16,000	15,500	92,000	32,000	42,000	0,800	4	**16,008**
16,000	16,000	15,500	92,000	32,000	42,000	1,000	4	**16,010**
16,000	16,000	15,500	92,000	32,000	42,000	1,500	4	**16,015**
16,000	16,000	15,500	92,000	32,000	42,000	2,000	4	**16,020**
16,000	16,000	15,500	92,000	32,000	42,000	2,500	4	**16,025**
16,000	16,000	15,500	92,000	32,000	42,000	3,000	4	**16,030**
16,000	16,000	15,500	92,000	32,000	42,000	4,000	4	**16,040**
20,000	20,000	19,500	104,000	38,000	52,000	1,000	4	**20,010**
20,000	20,000	19,500	104,000	38,000	52,000	2,000	4	**20,020**
20,000	20,000	19,500	104,000	38,000	52,000	4,000	4	**20,040**

ISO	Härte	v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20
			$a_p = l2$		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28

v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20
	$a_p = l2$					a_e max = 0,02xD	
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10
1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
460	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser Ti

Katalog-Nr. 54561

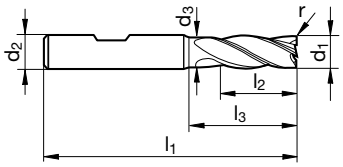
HPC | HSC | SuperF-UT Ti | DIN 6527 L | VHM | ZrN | HB | 35° 38° | 5°

R ±0,05

P	M	K	N	S	H
○	○			●	

Arbeitsrichtwerte Seite 204-217

- optimierte Schneidkantenausführung für hochfeste Titanlegierungen und Sonderwerkstoffe
- mit definierten Eckradien
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
6,000	6,000	5,700	57,000	13,000	20,000	0,500	4	**6,005**
6,000	6,000	5,700	57,000	13,000	20,000	0,800	4	**6,008**
6,000	6,000	5,700	57,000	13,000	20,000	1,000	4	**6,010**
6,000	6,000	5,700	57,000	13,000	20,000	1,500	4	**6,015**
6,000	6,000	5,700	57,000	13,000	20,000	2,000	4	**6,020**
8,000	8,000	7,700	63,000	19,000	26,000	0,500	4	**8,005**
8,000	8,000	7,700	63,000	19,000	26,000	0,800	4	**8,008**
8,000	8,000	7,700	63,000	19,000	26,000	1,000	4	**8,010**
8,000	8,000	7,700	63,000	19,000	26,000	1,500	4	**8,015**
8,000	8,000	7,700	63,000	19,000	26,000	2,000	4	**8,020**
10,000	10,000	9,500	72,000	22,000	30,000	0,500	4	**10,005**
10,000	10,000	9,500	72,000	22,000	30,000	0,800	4	**10,008**
10,000	10,000	9,500	72,000	22,000	30,000	1,000	4	**10,010**
10,000	10,000	9,500	72,000	22,000	30,000	2,000	4	**10,020**
12,000	12,000	11,500	83,000	26,000	36,000	0,500	4	**12,005**
12,000	12,000	11,500	83,000	26,000	36,000	0,800	4	**12,008**
12,000	12,000	11,500	83,000	26,000	36,000	1,000	4	**12,010**
12,000	12,000	11,500	83,000	26,000	36,000	1,500	4	**12,015**
12,000	12,000	11,500	83,000	26,000	36,000	2,000	4	**12,020**
12,000	12,000	11,500	83,000	26,000	36,000	2,500	4	**12,025**
12,000	12,000	11,500	83,000	26,000	36,000	3,000	4	**12,030**
12,000	12,000	11,500	83,000	26,000	36,000	4,000	4	**12,040**
16,000	16,000	15,500	92,000	32,000	42,000	0,500	4	**16,005**
16,000	16,000	15,500	92,000	32,000	42,000	0,800	4	**16,008**
16,000	16,000	15,500	92,000	32,000	42,000	1,000	4	**16,010**
16,000	16,000	15,500	92,000	32,000	42,000	1,500	4	**16,015**
16,000	16,000	15,500	92,000	32,000	42,000	2,000	4	**16,020**
16,000	16,000	15,500	92,000	32,000	42,000	2,500	4	**16,025**
16,000	16,000	15,500	92,000	32,000	42,000	3,000	4	**16,030**
16,000	16,000	15,500	92,000	32,000	42,000	4,000	4	**16,040**
20,000	20,000	19,500	104,000	38,000	52,000	1,000	4	**20,010**
20,000	20,000	19,500	104,000	38,000	52,000	2,000	4	**20,020**
20,000	20,000	19,500	104,000	38,000	52,000	4,000	4	**20,040**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			$a_p = l2$		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	$a_p = l2$				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10
1000	0,021	0,043	0,057	0,088	0,11	0,14	0,18
460	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser S

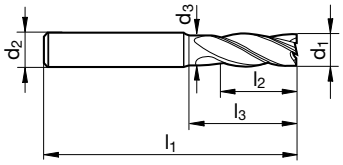
Katalog-Nr. 54556

SuperF-UT S | DIN 6527 L | VHM | AlTiN nano | HA | 40° 42° | 9°

P	M	K	N	S	H
○	○	○	○	○	

Arbeitsrichtwerte Seite 204-217

- ohne Eckenschutzfase
- zum Feinstschlichten
- bis 1600 N/mm²
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- HB Spannfläche auf Anfrage möglich



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	Z	Code-Nr.
3,000	6,000	2,800	57,000	8,000	15,000	4	**3,000**
4,000	6,000	3,800	57,000	11,000	18,000	4	**4,000**
5,000	6,000	4,800	57,000	13,000	18,000	4	**5,000**
6,000	6,000	5,700	57,000	13,000	20,000	4	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	4	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	4	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	4	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	4	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	4	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			$a_p = l2$				a_e max = 0,02xD		
P	≤ 850 N/mm²	**360**	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/mm²	**270**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
M	≤ 750 N/mm²	**240**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/mm²	**120**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**60**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**120**	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

SuperF-UT-Fräser N²

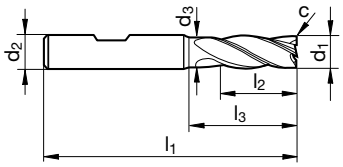
Katalog-Nr. 64552

HPC | HSC | SuperF-UT N² | DIN 6527 L | VHM | TiAlZrN | HB | 35° 38° | 4°

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 204-217

- sehr großes Materialspektrum = universeller Einsatzbereich
- extrem hohe Standzeiten durch hochharte TiAlZrN-Beschichtung
- bis 1600 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- auch als Satz 78883 1,00 erhältlich



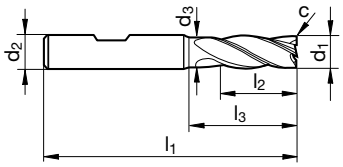
d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
3,000	6,000	2,800	57,000	8,000	15,000	0,100	4	**3,000**
4,000	6,000	3,800	57,000	11,000	18,000	0,100	4	**4,000**
5,000	6,000	4,800	57,000	13,000	18,000	0,100	4	**5,000**
6,000	6,000	5,700	57,000	13,000	20,000	0,150	4	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	0,150	4	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,200	4	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,200	4	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,350	4	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,450	4	**20,000**
25,000	25,000	24,000	121,000	45,000	63,000	0,600	4	**25,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD			a_p = l2		HPC	HSC		a_e max = 0,2xD	
P	≤ 850 N/mm²	**180**	0,016	0,031	0,042	0,060	0,07	0,10	0,12	**305**	0,025	0,050	0,067	0,096	0,12	0,15	0,19
	≥ 850 N/mm²	**135**	0,014	0,027	0,036	0,050	0,06	0,08	0,10	**230**	0,022	0,043	0,058	0,080	0,10	0,13	0,16
K	≤ 240 HB	**160**	0,017	0,033	0,044	0,065	0,08	0,10	0,13	**270**	0,026	0,053	0,070	0,104	0,12	0,17	0,21
	≥ 240 HB	**140**	0,015	0,030	0,040	0,055	0,07	0,09	0,11	**240**	0,024	0,048	0,064	0,088	0,11	0,14	0,18

SuperF-UT-Fräser

SuperF-UT-Fräser NL

Katalog-Nr. 54553



P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 204-217

- universell einsetzbar
- bis 1600 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt
- HSC Schlichten bis 4xD Schneidenlänge
- ungleiche Teilung, gleiche Drallsteigung

d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	Code-Nr.
6,000	6,000	5,700	65,000	24,000	28,000	0,120	4	**6,000**
8,000	8,000	7,700	75,000	32,000	38,000	0,160	4	**8,000**
10,000	10,000	9,500	100,000	40,000	58,000	0,200	4	**10,000**
12,000	12,000	11,500	100,000	48,000	53,000	0,240	4	**12,000**
16,000	16,000	15,500	125,000	64,000	75,000	0,320	4	**16,000**
20,000	20,000	19,500	150,000	80,000	98,000	0,400	4	**20,000**
25,000	25,000	24,000	175,000	100,000	117,000	0,500	4	**25,000**

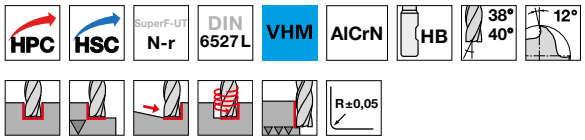
ISO	Härte	v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**130**	0,013	0,025	0,012	0,048	0,06	0,08	0,10
	≥ 850 N/mm²	**100**	0,011	0,022	0,029	0,040	0,05	0,06	0,08
K	≤ 240 HB	**120**	0,013	0,027	0,035	0,052	0,06	0,08	0,10
	≥ 240 HB	**100**	0,012	0,024	0,032	0,044	0,05	0,07	0,09

v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20
	a_p = l2					a_e max = 0,02xD	
160	0,009	0,017	0,023	0,033	0,04	0,05	0,07
120	0,007	0,015	0,020	0,028	0,03	0,04	0,06
140	0,009	0,018	0,024	0,036	0,04	0,06	0,07
120	0,008	0,017	0,022	0,030	0,04	0,05	0,06

SuperF-UT-Fräser

SuperF-UT-Fräser N-r

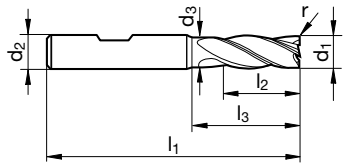
Katalog-Nr. 54550



P	M	K	N	S	H
●	○		●	●	

Arbeitsrichtwerte
Seite 204-217

- sehr großes Materialspektrum = universeller Einsatzbereich
- optimiert für Fräsoperationen im HPC und HSC Bereich
- mit definierten Eckradien
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
3,000	6,000	2,800	57,000	8,000	15,000	0,200	4	**3,002**
3,000	6,000	2,800	57,000	8,000	15,000	0,500	4	**3,005**
4,000	6,000	3,800	57,000	11,000	18,000	0,200	4	**4,002**
4,000	6,000	3,800	57,000	11,000	18,000	0,500	4	**4,005**
4,000	6,000	3,800	57,000	11,000	18,000	1,000	4	**4,010**
5,000	6,000	4,800	57,000	13,000	18,000	0,200	4	**5,002**
5,000	6,000	4,800	57,000	13,000	18,000	0,500	4	**5,005**
5,000	6,000	4,800	57,000	13,000	18,000	1,000	4	**5,010**
6,000	6,000	5,700	57,000	13,000	20,000	0,200	4	**6,002**
6,000	6,000	5,700	57,000	13,000	20,000	0,500	4	**6,005**
6,000	6,000	5,700	57,000	13,000	20,000	1,000	4	**6,010**
6,000	6,000	5,700	57,000	13,000	20,000	1,500	4	**6,015**
8,000	8,000	7,700	63,000	19,000	26,000	0,300	4	**8,003**
8,000	8,000	7,700	63,000	19,000	26,000	0,500	4	**8,005**
8,000	8,000	7,700	63,000	19,000	26,000	1,000	4	**8,010**
8,000	8,000	7,700	63,000	19,000	26,000	1,500	4	**8,015**
8,000	8,000	7,700	63,000	19,000	26,000	2,000	4	**8,020**
10,000	10,000	9,500	72,000	22,000	30,000	0,300	4	**10,003**
10,000	10,000	9,500	72,000	22,000	30,000	0,500	4	**10,005**
10,000	10,000	9,500	72,000	22,000	30,000	1,000	4	**10,010**
10,000	10,000	9,500	72,000	22,000	30,000	1,500	4	**10,015**
10,000	10,000	9,500	72,000	22,000	30,000	2,000	4	**10,020**
10,000	10,000	9,500	72,000	22,000	30,000	2,500	4	**10,025**
12,000	12,000	11,500	83,000	26,000	36,000	0,300	4	**12,003**
12,000	12,000	11,500	83,000	26,000	36,000	0,500	4	**12,005**
12,000	12,000	11,500	83,000	26,000	36,000	1,000	4	**12,010**
12,000	12,000	11,500	83,000	26,000	36,000	1,500	4	**12,015**
12,000	12,000	11,500	83,000	26,000	36,000	2,000	4	**12,020**
12,000	12,000	11,500	83,000	26,000	36,000	2,500	4	**12,025**
12,000	12,000	11,500	83,000	26,000	36,000	3,000	4	**12,030**
16,000	16,000	15,500	92,000	32,000	42,000	0,500	4	**16,005**
16,000	16,000	15,500	92,000	32,000	42,000	1,000	4	**16,010**
16,000	16,000	15,500	92,000	32,000	42,000	1,500	4	**16,015**
16,000	16,000	15,500	92,000	32,000	42,000	2,000	4	**16,020**
16,000	16,000	15,500	92,000	32,000	42,000	2,500	4	**16,025**
16,000	16,000	15,500	92,000	32,000	42,000	3,000	4	**16,030**
16,000	16,000	15,500	92,000	32,000	42,000	4,000	4	**16,040**
20,000	20,000	19,500	104,000	38,000	52,000	0,500	4	**20,005**
20,000	20,000	19,500	104,000	38,000	52,000	1,000	4	**20,010**
20,000	20,000	19,500	104,000	38,000	52,000	1,500	4	**20,015**
20,000	20,000	19,500	104,000	38,000	52,000	2,000	4	**20,020**
20,000	20,000	19,500	104,000	38,000	52,000	2,500	4	**20,025**
20,000	20,000	19,500	104,000	38,000	52,000	3,000	4	**20,030**
20,000	20,000	19,500	104,000	38,000	52,000	4,000	4	**20,040**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD				a_e = 1,0xD		
P	≤ 850 N/mm²	**180**	0,016	0,031	0,042	0,060	0,07	0,10	0,12
	≥ 850 N/mm²	**135**	0,014	0,027	0,036	0,050	0,06	0,08	0,10
M	≤ 750 N/mm²	**120**	0,014	0,027	0,036	0,050	0,06	0,08	0,10
	≥ 750 N/mm²	**60**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**30**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**60**	0,012	0,024	0,032	0,045	0,05	0,07	0,09
N	≤ 5 % Si	**500**	0,020	0,039	0,052	0,080	0,10	0,13	0,16
	≥ 5 % Si	**230**	0,017	0,033	0,044	0,060	0,07	0,10	0,12

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = 1,0xD				a_e max = 0,75xD		
210	0,018	0,036	0,048	0,069	0,08	0,11	0,14
160	0,016	0,031	0,041	0,058	0,07	0,09	0,12
140	0,016	0,031	0,041	0,058	0,07	0,09	0,12
80	0,013	0,025	0,034	0,048	0,06	0,08	0,10
40	0,010	0,020	0,027	0,038	0,05	0,06	0,08
80	0,014	0,029	0,038	0,054	0,06	0,09	0,11
600	0,022	0,045	0,060	0,092	0,11	0,15	0,18
300	0,019	0,038	0,051	0,069	0,08	0,11	0,14

SuperF-UT-Fräser

SuperF-UT-Fräser VA-X²

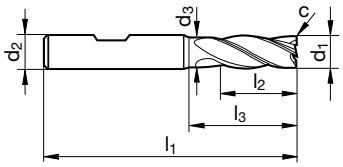
Katalog-Nr. 64553

HPC | HSC | SuperF-UT VA-X² | DIN 6527 L | VHM | TiAlZrN | HB | 36° 38° | 7°

P	M	K	N	S	H
○	●		○	●	

Arbeitsrichtwerte Seite 204-217

- extrem hohe Standzeiten durch hochharte TiAlZrN-Beschichtung
- zur Bearbeitung von rost- und säurebeständigen Stählen sowie Nickelbasislegierungen
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
3,000	6,000	2,800	57,000	8,000	15,000	0,100	4	**3,000**
3,500	6,000	3,300	57,000	10,000	15,000	0,100	4	**3,500**
4,000	6,000	3,800	57,000	11,000	18,000	0,150	4	**4,000**
4,500	6,000	4,300	57,000	11,000	18,000	0,150	4	**4,500**
5,000	6,000	4,800	57,000	13,000	18,000	0,150	4	**5,000**
5,500	6,000	5,300	57,000	13,000	19,400	0,200	4	**5,500**
6,000	6,000	5,700	57,000	13,000	20,000	0,200	4	**6,000**
6,500	8,000	6,200	63,000	16,000	24,400	0,250	4	**6,500**
7,000	8,000	6,700	63,000	16,000	24,900	0,250	4	**7,000**
7,500	8,000	7,200	63,000	19,000	25,300	0,250	4	**7,500**
8,000	8,000	7,700	63,000	19,000	26,000	0,250	4	**8,000**
8,500	10,000	8,200	72,000	19,000	29,400	0,300	4	**8,500**
9,000	10,000	8,700	72,000	19,000	29,900	0,300	4	**9,000**
9,500	10,000	9,200	72,000	22,000	30,300	0,300	4	**9,500**
10,000	10,000	9,500	72,000	22,000	30,000	0,300	4	**10,000**
11,000	12,000	10,500	83,000	26,000	34,700	0,350	4	**11,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,350	4	**12,000**
14,000	14,000	13,500	83,000	26,000	36,000	0,400	4	**14,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,500	4	**16,000**
18,000	18,000	17,500	92,000	32,000	42,000	0,600	4	**18,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,600	4	**20,000**
25,000	25,000	24,000	121,000	45,000	63,000	0,750	4	**25,000**

ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20		3	6	8	10	12	16	20
			$a_p = l2$		HPC	HSC		a_e max = 0,10xD			$a_p = l2$					a_e max = 0,02xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28	**360**	0,017	0,034	0,046	0,066	0,08	0,11	0,13
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**270**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23	**240**	0,015	0,030	0,040	0,055	0,07	0,09	0,11
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18	**120**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15	**60**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21	**120**	0,013	0,026	0,035	0,050	0,06	0,08	0,10
N	≤ 7 % Si	**900**	0,045	0,090	0,120	0,184	0,22	0,29	0,37	**1000**	0,021	0,043	0,057	0,088	0,11	0,14	0,18
	≥ 7 % Si	**430**	0,038	0,076	0,101	0,138	0,17	0,22	0,28	**460**	0,018	0,036	0,048	0,066	0,08	0,11	0,13

SuperF-UT-Fräser

SuperF-UT-Fräser VA-r

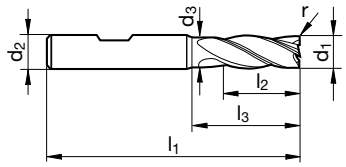
Katalog-Nr. 54542

HPC | HSC | SuperF-UT VA-r | DIN 6527 L | VHM | TiAlSiN | HB | 38° 40° | 12° | R±0,05

P	M	K	N	S	H
○	●		○	●	

Arbeitsrichtwerte Seite 204-217

- rost-/säurebeständige Stähle
- optimiert für Fräsoperationen im HPC und HSC Bereich
- mit definierten Eckradien
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung



d1 h10 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
3,000	6,000	2,800	57,000	8,000	15,000	0,200	4	**3,002**
3,000	6,000	2,800	57,000	8,000	15,000	0,500	4	**3,005**
4,000	6,000	3,800	57,000	11,000	18,000	0,200	4	**4,002**
4,000	6,000	3,800	57,000	11,000	18,000	0,500	4	**4,005**
4,000	6,000	3,800	57,000	11,000	18,000	1,000	4	**4,010**
5,000	6,000	4,800	57,000	13,000	18,000	0,200	4	**5,002**
5,000	6,000	4,800	57,000	13,000	18,000	0,500	4	**5,005**
5,000	6,000	4,800	57,000	13,000	18,000	1,000	4	**5,010**
6,000	6,000	5,700	57,000	13,000	20,000	0,200	4	**6,002**
6,000	6,000	5,700	57,000	13,000	20,000	0,500	4	**6,005**
6,000	6,000	5,700	57,000	13,000	20,000	1,000	4	**6,010**
6,000	6,000	5,700	57,000	13,000	20,000	1,500	4	**6,015**
8,000	8,000	7,700	63,000	19,000	26,000	0,300	4	**8,003**
8,000	8,000	7,700	63,000	19,000	26,000	0,500	4	**8,005**
8,000	8,000	7,700	63,000	19,000	26,000	1,000	4	**8,010**
8,000	8,000	7,700	63,000	19,000	26,000	1,500	4	**8,015**
8,000	8,000	7,700	63,000	19,000	26,000	2,000	4	**8,020**
10,000	10,000	9,500	72,000	22,000	30,000	0,300	4	**10,003**
10,000	10,000	9,500	72,000	22,000	30,000	0,500	4	**10,005**
10,000	10,000	9,500	72,000	22,000	30,000	1,000	4	**10,010**
10,000	10,000	9,500	72,000	22,000	30,000	1,500	4	**10,015**
10,000	10,000	9,500	72,000	22,000	30,000	2,000	4	**10,020**
10,000	10,000	9,500	72,000	22,000	30,000	2,500	4	**10,025**
12,000	12,000	11,500	83,000	26,000	36,000	0,300	4	**12,003**
12,000	12,000	11,500	83,000	26,000	36,000	0,500	4	**12,005**
12,000	12,000	11,500	83,000	26,000	36,000	1,000	4	**12,010**
12,000	12,000	11,500	83,000	26,000	36,000	1,500	4	**12,015**
12,000	12,000	11,500	83,000	26,000	36,000	2,000	4	**12,020**
12,000	12,000	11,500	83,000	26,000	36,000	2,500	4	**12,025**
12,000	12,000	11,500	83,000	26,000	36,000	3,000	4	**12,030**
16,000	16,000	15,500	92,000	32,000	42,000	0,500	4	**16,005**
16,000	16,000	15,500	92,000	32,000	42,000	1,000	4	**16,010**
16,000	16,000	15,500	92,000	32,000	42,000	1,500	4	**16,015**
16,000	16,000	15,500	92,000	32,000	42,000	2,000	4	**16,020**
16,000	16,000	15,500	92,000	32,000	42,000	2,500	4	**16,025**
16,000	16,000	15,500	92,000	32,000	42,000	3,000	4	**16,030**
16,000	16,000	15,500	92,000	32,000	42,000	4,000	4	**16,040**
20,000	20,000	19,500	104,000	38,000	52,000	0,500	4	**20,005**
20,000	20,000	19,500	104,000	38,000	52,000	1,000	4	**20,010**
20,000	20,000	19,500	104,000	38,000	52,000	1,500	4	**20,015**
20,000	20,000	19,500	104,000	38,000	52,000	2,000	4	**20,020**
20,000	20,000	19,500	104,000	38,000	52,000	2,500	4	**20,025**
20,000	20,000	19,500	104,000	38,000	52,000	3,000	4	**20,030**
20,000	20,000	19,500	104,000	38,000	52,000	4,000	4	**20,040**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD				a_e = 1,0xD		
P	≤ 850 N/mm²	**180**	0,016	0,031	0,042	0,060	0,07	0,10	0,12
	≥ 850 N/mm²	**135**	0,014	0,027	0,036	0,050	0,06	0,08	0,10
M	≤ 750 N/mm²	**120**	0,014	0,027	0,036	0,050	0,06	0,08	0,10
	≥ 750 N/mm²	**60**	0,011	0,021	0,028	0,040	0,05	0,06	0,08
S	Ni-Basis	**30**	0,008	0,017	0,022	0,032	0,04	0,05	0,06
	Ti-Basis	**60**	0,012	0,024	0,032	0,045	0,05	0,07	0,09
N	≤ 5 % Si	**500**	0,020	0,039	0,052	0,080	0,10	0,13	0,16
	≥ 5 % Si	**230**	0,017	0,033	0,044	0,060	0,07	0,10	0,12

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = 1,0xD				a_e max = 0,75xD		
210	0,018	0,036	0,048	0,069	0,08	0,11	0,14
160	0,016	0,031	0,041	0,058	0,07	0,09	0,12
140	0,016	0,031	0,041	0,058	0,07	0,09	0,12
80	0,013	0,025	0,034	0,048	0,06	0,08	0,10
40	0,010	0,020	0,027	0,038	0,05	0,06	0,08
80	0,014	0,029	0,038	0,054	0,06	0,09	0,11
600	0,022	0,045	0,060	0,092	0,11	0,15	0,18
300	0,019	0,038	0,051	0,069	0,08	0,11	0,14

SuperF-UT-Fräser

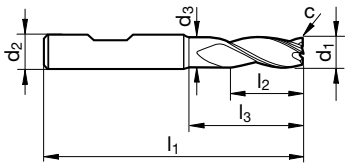
SuperF-UT-Fräser Al-L

Katalog-Nr. 74556

HPC | HSC | SuperF-UT Al-L | WN | VHM | blank | HB | 39° 40° 41° | 10°

P	M	K	N	S	H
			●		

Arbeitsrichtwerte Seite 204-217



- nanopolierte Schneidkanten
- besonders stabil durch Kernsprung
- Halsfreischliff
- Zentrumschnitt
- 3-Schneider mit vergrößerten Spanräumen
- Al und Al-Legierungen sowie weitere langspanende NE-Metalle
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- Schneidenlänge 3xD
- Spiegelschliff für optimale Spanabfuhr
- optimierte Mikrogeometrie

d1 e8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
5,000	6,000	4,800	57,000	15,000	19,400	0,050	3	**5,000**
6,000	6,000	5,700	65,000	18,000	28,000	0,060	3	**6,000**
8,000	8,000	7,700	75,000	24,000	38,000	0,080	3	**8,000**
10,000	10,000	9,500	80,000	30,000	38,000	0,100	3	**10,000**
12,000	12,000	11,500	93,000	36,000	46,000	0,120	3	**12,000**
16,000	16,000	15,500	108,000	48,000	58,000	0,160	3	**16,000**
20,000	20,000	19,500	126,000	60,000	74,000	0,200	3	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max =0,10xD	
N	≤ 5 % Si	**900**	0,045	0,090	0,120	0,184	0,221	0,294	0,368
	≥ 5 % Si	**400**	0,038	0,076	0,101	0,138	0,166	0,221	0,276
NE	≤ 850 N/mm²	**470**	0,038	0,076	0,101	0,138	0,166	0,221	0,276

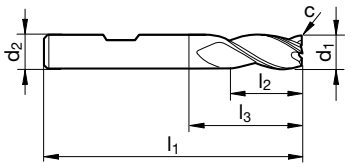
v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
1000	0,021	0,043	0,057	0,088	0,106	0,141	0,176
460	0,018	0,036	0,048	0,066	0,079	0,106	0,132
500	0,018	0,030	0,036	0,048	0,066	0,079	0,106

Optional bieten wir unsere Carbo-Beschichtung zur Verbesserung von Spanfluss und Standzeit an.

SuperF-UT-Fräser

SuperF-UT-Fräser Al-XL

Katalog-Nr. 74558



HPC | HSC | SuperF-UT Al-XL | WN | VHM | blank | HB | 39° 40° 41° | 10°

P	M	K	N	S	H
			●		

Arbeitsrichtwerte Seite 204-217

- nanopolierte Schneidkanten
- besonders stabil durch Kernsprung
- Zentrumschnitt
- 3-Schneider mit vergrößerten Spanräumen
- Al und Al-Legierungen sowie weitere langspanende NE-Metalle
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- Schneidenlänge 5xD
- Spiegelschliff für optimale Spanabfuhr
- optimierte Mikrogeometrie
- ohne Halsfreischliff

d1 e8 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
6,000	6,000	75,000	30,000	39,000	0,060	3	**6,000**
8,000	8,000	86,000	40,000	50,000	0,080	3	**8,000**
10,000	10,000	100,000	50,000	60,000	0,100	3	**10,000**
12,000	12,000	120,000	60,000	75,000	0,120	3	**12,000**
16,000	16,000	150,000	80,000	102,000	0,160	3	**16,000**
20,000	20,000	175,000	100,000	125,000	0,200	3	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
N	≤ 5 % Si	**400**	0,016	0,031	0,042	0,064	0,08	0,10	0,13
	≥ 5 % Si	**200**	0,013	0,027	0,035	0,048	0,06	0,08	0,10
NE	≤ 850 N/mm²	**190**	0,013	0,027	0,035	0,048	0,06	0,08	0,10

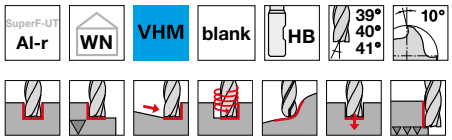
v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
450	0,010	0,020	0,026	0,040	0,048	0,064	0,080
210	0,008	0,017	0,022	0,030	0,036	0,048	0,060
220	0,008	0,017	0,022	0,030	0,036	0,048	0,060

Optional bieten wir unsere Carbo-Beschichtung zur Verbesserung von Spanfluss und Standzeit an.

SuperF-UT-Fräser

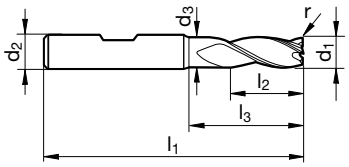
SuperF-UT-Fräser Al-r

Katalog-Nr. 74562



P	M	K	N	S	H
			●		

Arbeitsrichtwerte
Seite 204-217



- nanopolierte Schneidkanten
- Halsfreischliff
- Zentrumschnitt
- 3-Schneider mit vergrößerten Spanräumen
- Al und Al-Legierungen sowie weitere langspanende NE-Metalle
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- mit definierten Eckradien
- Spiegelschliff für optimale Spanabfuhr
- optimierte Mikrogeometrie

d1 e8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	r	Z	Code-Nr.
6,000	6,000	5,700	57,000	13,000	20,000	0,500	3	**6,005**
6,000	6,000	5,700	57,000	13,000	20,000	1,000	3	**6,010**
8,000	8,000	7,700	63,000	19,000	26,000	0,500	3	**8,005**
8,000	8,000	7,700	63,000	19,000	26,000	1,000	3	**8,010**
10,000	10,000	9,500	72,000	22,000	30,000	0,500	3	**10,005**
10,000	10,000	9,500	72,000	22,000	30,000	1,000	3	**10,010**
10,000	10,000	9,500	72,000	22,000	30,000	1,500	3	**10,015**
12,000	12,000	11,500	83,000	26,000	36,000	0,500	3	**12,005**
12,000	12,000	11,500	83,000	26,000	36,000	1,000	3	**12,010**
12,000	12,000	11,500	83,000	26,000	36,000	1,500	3	**12,015**
12,000	12,000	11,500	83,000	26,000	36,000	2,000	3	**12,020**
12,000	12,000	11,500	83,000	26,000	36,000	2,500	3	**12,025**
12,000	12,000	11,500	83,000	26,000	36,000	3,000	3	**12,030**
12,000	12,000	11,500	83,000	26,000	36,000	4,000	3	**12,040**
16,000	16,000	15,500	92,000	32,000	42,000	1,000	3	**16,010**
16,000	16,000	15,500	92,000	32,000	42,000	2,000	3	**16,020**
16,000	16,000	15,500	92,000	32,000	42,000	2,500	3	**16,025**
16,000	16,000	15,500	92,000	32,000	42,000	3,000	3	**16,030**
16,000	16,000	15,500	92,000	32,000	42,000	4,000	3	**16,040**
20,000	20,000	19,500	104,000	38,000	52,000	1,000	3	**20,010**
20,000	20,000	19,500	104,000	38,000	52,000	2,000	3	**20,020**
20,000	20,000	19,500	104,000	38,000	52,000	2,500	3	**20,025**
20,000	20,000	19,500	104,000	38,000	52,000	3,000	3	**20,030**
20,000	20,000	19,500	104,000	38,000	52,000	4,000	3	**20,040**
25,000	25,000	24,000	121,000	45,000	63,000	2,000	3	**25,020**
25,000	25,000	24,000	121,000	45,000	63,000	3,000	3	**25,030**
25,000	25,000	24,000	121,000	45,000	63,000	4,000	3	**25,040**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD					a_e = 1,0xD	
N	≤ 5 % Si	**500**	0,020	0,039	0,052	0,080	0,10	0,13	0,16
	≥ 5 % Si	**230**	0,017	0,033	0,044	0,060	0,07	0,10	0,12
NE	≤ 850 N/mm²	**250**	0,017	0,033	0,044	0,060	0,07	0,10	0,12

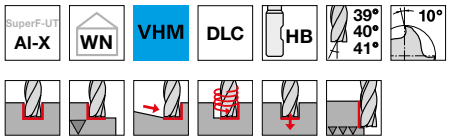
v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,33xD		
750	0,025	0,051	0,068	0,104	0,12	0,17	0,21
345	0,021	0,043	0,057	0,078	0,09	0,12	0,16
375	0,021	0,043	0,057	0,078	0,09	0,12	0,16

Optional bieten wir unsere Carbo-Beschichtung zur Verbesserung von Spanfluss und Standzeit an.

SuperF-UT-Fräser

SuperF-UT-Fräser Al-X

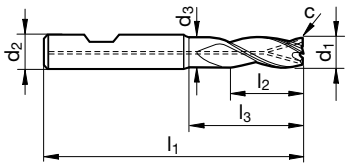
Katalog-Nr. 54592



P	M	K	N	S	H
			●		

Arbeitsrichtwerte
Seite 204-217

- mit Innenkühlung: radiale und axiale Austritte
- nanopolierte Schneidkanten
- Halsfreischliff
- Zentrumschnitt
- 3-Schneider mit vergrößerten Spanräumen
- Al und Al-Legierungen sowie weitere langspanende NE-Metalle
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- extrem hohe Standzeiten durch hochharte DLC-Beschichtung



d1 e8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	c mm x 45°	Z	**Code-Nr.**
5,000	6,000	4,800	57,000	13,000	18,000	0,050	3	**5,000**
6,000	6,000	5,700	57,000	13,000	20,000	0,060	3	**6,000**
8,000	8,000	7,700	63,000	19,000	26,000	0,080	3	**8,000**
10,000	10,000	9,500	72,000	22,000	30,000	0,100	3	**10,000**
12,000	12,000	11,500	83,000	26,000	36,000	0,120	3	**12,000**
16,000	16,000	15,500	92,000	32,000	42,000	0,160	3	**16,000**
20,000	20,000	19,500	104,000	38,000	52,000	0,200	3	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD				a_e = 1,0xD		
N	≤ 5 % Si	**500**	0,020	0,039	0,052	0,080	0,10	0,13	0,16
	≥ 5 % Si	**230**	0,017	0,033	0,044	0,060	0,07	0,10	0,12
NE	≤ 850 N/mm²	**250**	0,017	0,033	0,044	0,060	0,07	0,10	0,12

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,33xD		
750	0,025	0,051	0,068	0,104	0,12	0,17	0,21
345	0,021	0,043	0,057	0,078	0,09	0,12	0,16
375	0,021	0,043	0,057	0,078	0,09	0,12	0,16

SuperF-UT-Fräser

SuperF-UT-Fräser Z, Sätze

Katalog-Nr. 78882

TC | HPC | HSC | SuperF-UT Z | WN | VHM | AlTiN+ | HB | 48° | 9°

P	M	K	N	S	H
●	●			●	

Arbeitsrichtwerte Seite 204-217

- besonders stabil durch Kernsprung
- universell einsetzbar
- Werkstoffe bis 1400 N/mm²
- Mikroeckenschutz
- Zentrumschnitt
- ungleiche Teilung
- HPC-Bearbeitung in zähen, niedrig- und hochlegierten Stählen und in schwer bearbeitbaren Sonderwerkstoffen
- bestehend aus Katalog-Nr. 54577

Code-Nr.	d1 mm	Stück/Satz
1,000	**6,0-16,0**	5
2,000	**6.0-12.0**	4

ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = l2		HPC	HSC		a_e max = 0,10xD	
P	≤ 850 N/mm²	**340**	0,036	0,072	0,096	0,138	0,17	0,22	0,28
	≥ 850 N/mm²	**250**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
M	≤ 750 N/mm²	**220**	0,031	0,062	0,083	0,115	0,14	0,18	0,23
	≥ 750 N/mm²	**110**	0,024	0,048	0,064	0,092	0,11	0,15	0,18
S	Ni-Basis	**60**	0,019	0,039	0,052	0,074	0,09	0,12	0,15
	Ti-Basis	**110**	0,028	0,055	0,074	0,104	0,12	0,17	0,21

v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2				a_e max = 0,02xD		
360	0,017	0,034	0,046	0,066	0,08	0,11	0,13
270	0,015	0,030	0,040	0,055	0,07	0,09	0,11
240	0,015	0,030	0,040	0,055	0,07	0,09	0,11
120	0,011	0,021	0,028	0,040	0,05	0,06	0,08
60	0,008	0,017	0,022	0,032	0,04	0,05	0,06
120	0,013	0,026	0,035	0,050	0,06	0,08	0,10

SuperF-UT-Fräser

SuperF-UT-Fräser N², Sätze

Katalog-Nr. 78883

HPC | HSC | SuperF-UT N² | DIN 6527 L | VHM | TiAlZrN | HB | 35° 38° | 4°

P	M	K	N	S	H
●	○	●	○	○	○

Arbeitsrichtwerte Seite 204-217

- sehr großes Materialspektrum = universeller Einsatzbereich
- extrem hohe Standzeiten durch hochharte TiAlZrN-Beschichtung
- bis 1600 N/mm²
- Mikroeckenschutz
- Halsfreischliff
- Zentrumschnitt
- ruhiger, vibrationsfreier Lauf durch ungleiche Drallsteigung
- bestehend aus Katalog-Nr. 64552

Code-Nr.	d1 mm	Stück/Satz
1,000	**6,0-16,0**	5

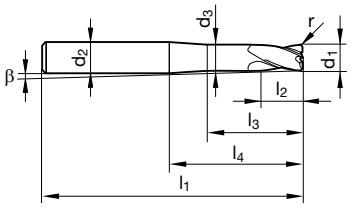
ISO	Härte	v_c	f_z (mm/z) / Ø						
			3	6	8	10	12	16	20
			a_p = 1,0xD				a_e = 1,0xD		
P	≤850 N/mm²	**180**	0,016	0,031	0,042	0,060	0,07	0,10	0,12
	≥850 N/mm²	**135**	0,014	0,027	0,036	0,050	0,06	0,08	0,10
K	≤240 HB	**160**	0,017	0,033	0,044	0,065	0,08	0,10	0,13
	≥240 HB	**140**	0,015	0,030	0,040	0,055	0,07	0,09	0,11

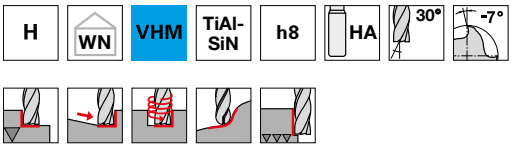
v_c	f_z (mm/z) / Ø						
	3	6	8	10	12	16	20
	a_p = l2		HPC	HSC		a_e max = 0,2xD	
305	0,025	0,050	0,067	0,096	0,12	0,15	0,19
230	0,022	0,043	0,058	0,080	0,10	0,13	0,16
270	0,026	0,053	0,070	0,104	0,12	0,17	0,21
240	0,024	0,048	0,064	0,088	0,11	0,14	0,18

VHM Fräser

Kopierfräser mit Torusanschliff

Katalog-Nr. 54304





P	M	K	N	S	H
○		●			●

Arbeitsrichtwerte Seite 204-217

- kurz
- Zentrumschnitt
- für den Formenbau
- hohe Standzeiten durch hochharte Beschichtung
- bis 63 HRC

d1 h8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	l4 mm	r mm	β °	Z	Code-Nr.
1,000	4,000	0,950	50,000	2,000	6,000	20,000	0,200	4,000	2	1,002
2,000	6,000	1,900	57,000	3,000	8,000	21,000	0,200	5,500	2	2,002
2,000	6,000	1,900	57,000	3,000	8,000	21,000	0,500	5,600	2	2,005
3,000	6,000	2,800	57,000	3,500	14,000	21,000	0,500	4,200	4	3,000
3,000	6,000	2,800	57,000	3,500	14,000	21,000	0,300	4,200	4	3,003
4,000	6,000	3,800	57,000	4,000	16,000	21,000	0,500	2,800	4	4,000
4,000	6,000	3,800	57,000	4,000	16,000	21,000	0,300	2,800	4	4,003
5,000	6,000	4,800	57,000	5,000	18,000	21,000	0,500	1,400	4	5,000
5,000	6,000	4,800	57,000	5,000	18,000	21,000	0,300	1,400	4	5,003
6,000	6,000	5,700	57,000	6,000	20,000	21,000	1,000		4	6,000
6,000	6,000	5,700	57,000	6,000	20,000	21,000	0,300		4	6,003
6,000	6,000	5,700	57,000	6,000	20,000	21,000	0,500		4	6,005
6,000	6,000	5,700	57,000	6,000	20,000	21,000	1,500		4	6,015
8,000	8,000	7,700	63,000	8,000	26,000	27,000	1,000		4	8,000
8,000	8,000	7,700	63,000	8,000	26,000	27,000	0,500		4	8,005
8,000	8,000	7,700	63,000	8,000	26,000	27,000	2,000		4	8,020
10,000	10,000	9,500	72,000	10,000	30,000	32,000	1,500		4	10,000
10,000	10,000	9,500	72,000	10,000	30,000	32,000	0,500		4	10,005
10,000	10,000	9,500	72,000	10,000	30,000	32,000	1,000		4	10,010
12,000	12,000	11,500	83,000	12,000	36,000	38,000	1,500		4	12,000
12,000	12,000	11,500	83,000	12,000	36,000	38,000	0,500		4	12,005
12,000	12,000	11,500	83,000	12,000	36,000	38,000	1,000		4	12,010
12,000	12,000	11,500	83,000	12,000	36,000	38,000	2,000		4	12,020
16,000	16,000	15,500	92,000	16,000	42,000	44,000	2,000		4	16,000
16,000	16,000	15,500	92,000	16,000	42,000	44,000	3,000		4	16,030

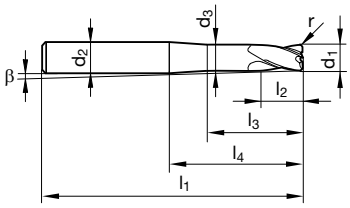
ISO	Härte	v_c	f_z (mm/z) / Ø						
			2	3	4	6	8	10	12
			a_p = 0,1xD					a_e = 0,1xD	
P	≤ 850 N/mm²	**200**	0,024	0,036	0,048	0,072	0,096	0,120	0,144
	≥ 850 N/mm²	**120**	0,024	0,036	0,048	0,072	0,096	0,120	0,144
H	≤ 55 HRC	**180**	0,026	0,039	0,052	0,078	0,104	0,130	0,156
	55-63 HRC	**90**	0,020	0,030	0,040	0,060	0,080	0,100	0,120
K	≥ 240 HB	**220**	0,030	0,045	0,060	0,090	0,120	0,150	0,180

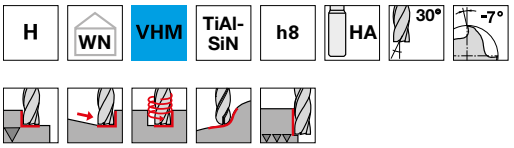
v_c	f_z (mm/z) / Ø						
	2	3	4	6	8	10	12
	a_p = 0,01xD				a_e max = 0,01xD		
300	0,017	0,025	0,034	0,050	0,067	0,084	0,101
200	0,017	0,025	0,034	0,050	0,067	0,084	0,101
270	0,018	0,027	0,036	0,055	0,073	0,091	0,109
160	0,013	0,020	0,026	0,039	0,052	0,065	0,078
360	0,018	0,027	0,036	0,054	0,072	0,090	0,108

VHM Fräser

Kopierfräser mit Torusanschliff

Katalog-Nr. 54305





P	M	K	N	S	H
○		●			●

Arbeitsrichtwerte Seite 204-217

- lang
- Zentrumschnitt
- mit extra langer Reichweite für den Formenbau
- hohe Standzeiten durch hochharte Beschichtung
- bis 63 HRC

d1 h8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	l4 mm	r mm	β °	Z	Code-Nr.
1,000	4,000	0,950	50,000	2,000	12,000	20,000	0,200	4,400	2	1,002
2,000	6,000	1,900	75,000	3,000	18,000	35,000	0,500	3,400	2	2,005
3,000	6,000	2,800	75,000	5,000	25,000	39,000	0,300	2,300	4	3,003
3,000	6,000	2,800	75,000	5,000	25,000	39,000	0,500	2,300	4	3,005
4,000	6,000	3,800	75,000	6,000	32,000	39,000	0,300	1,500	4	4,003
4,000	6,000	3,800	75,000	6,000	32,000	39,000	0,500	1,500	4	4,005
5,000	6,000	4,800	75,000	8,000	38,000	39,000	0,500	0,800	4	5,005
6,000	6,000	5,700	75,000	9,000	38,000	39,000	1,000		4	6,000
6,000	6,000	5,700	75,000	9,000	38,000	39,000	0,500		4	6,005
8,000	8,000	7,700	100,000	12,000	59,000	64,000	1,000		4	8,000
8,000	8,000	7,700	100,000	12,000	59,000	64,000	0,500		4	8,005
10,000	10,000	9,500	100,000	15,000	58,000	60,000	1,500		4	10,000
10,000	10,000	9,500	100,000	15,000	58,000	60,000	0,500		4	10,005
10,000	10,000	9,500	100,000	15,000	58,000	60,000	1,000		4	10,010
10,000	10,000	9,500	100,000	15,000	58,000	60,000	2,000		4	10,020
12,000	12,000	11,500	150,000	18,000	98,000	105,000	1,500		4	12,000
12,000	12,000	11,500	150,000	18,000	98,000	105,000	0,500		4	12,005
12,000	12,000	11,500	150,000	18,000	98,000	105,000	1,000		4	12,010
12,000	12,000	11,500	150,000	18,000	98,000	105,000	2,000		4	12,020
16,000	16,000	15,500	150,000	24,000	98,000	102,000	2,000		4	16,000

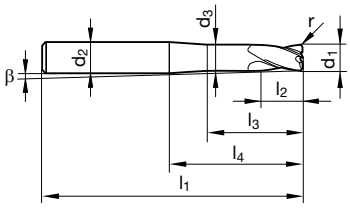
ISO	Härte	v_c	f_z (mm/z) / Ø						
			2	3	4	6	8	10	12
			a_p = 0,1xD					a_e = 0,1xD	
P	≤ 850 N/mm²	**100**	0,012	0,018	0,024	0,036	0,048	0,060	0,072
	≥ 850 N/mm²	**60**	0,012	0,018	0,024	0,036	0,048	0,060	0,072
H	≤ 55 HRC	**90**	0,013	0,020	0,026	0,039	0,052	0,065	0,078
	55-63 HRC	**50**	0,010	0,015	0,020	0,030	0,040	0,050	0,060
K	≥ 240 HB	**220**	0,030	0,045	0,060	0,090	0,120	0,150	0,180

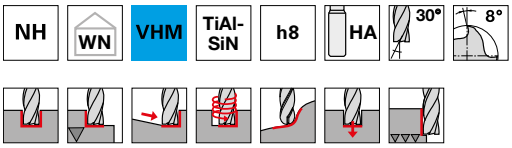
v_c	f_z (mm/z) / Ø						
	2	3	4	6	8	10	12
	a_p = 0,01xD					a_e max = 0,01xD	
150	0,008	0,013	0,017	0,025	0,034	0,042	0,050
100	0,008	0,013	0,017	0,025	0,034	0,042	0,050
135	0,009	0,014	0,018	0,027	0,036	0,046	0,055
80	0,007	0,010	0,013	0,020	0,026	0,033	0,039
360	0,018	0,027	0,036	0,054	0,072	0,090	0,108

VHM Fräser

Kopierfräser mit Torusanschliff

Katalog-Nr. 54302





P	M	K	N	S	H
●	●	●	○	●	○

Arbeitsrichtwerte Seite 204-217

- zum Schruppen, Schlichten und Feinstschlichten unter HSC-Bedingungen im Gesenk- und Formenbau
- Zentrumschnitt
- geeignet für Werkstoffe von 40 bis 54 HRC
- hohe Standzeiten durch hochharte Beschichtung

d1 h8 mm	d2 h6 mm	d3 mm	l1 mm	l2 mm	l3 mm	l4 mm	r mm	β °	Z	Code-Nr.
0,500	4,000	0,480	50,000	1,000	3,000	22,000	0,100	4,600	2	0,501
1,000	4,000	0,950	50,000	2,000	6,000	22,000	0,200	4,000	2	1,002
2,000	6,000	1,900	57,000	3,000	8,000	21,000	0,500	5,600	2	2,000
2,000	6,000	1,900	57,000	3,000	8,000	21,000	0,200	5,500	2	2,002
3,000	6,000	2,800	57,000	3,500	14,000	21,000	0,500	4,200	2	3,000
4,000	6,000	3,800	57,000	4,000	16,000	21,000	1,000	2,900	2	4,000
4,000	6,000	3,800	57,000	4,000	16,000	21,000	0,300	2,800	2	4,003
4,000	6,000	3,800	57,000	4,000	16,000	21,000	0,500	2,800	2	4,005
5,000	6,000	4,800	57,000	5,000	18,000	21,000	0,500	1,400	2	5,005
5,000	6,000	4,800	57,000	5,000	18,000	21,000	1,000	1,500	2	5,010
6,000	6,000	5,700	57,000	6,000	20,000	21,000	2,000		2	6,000
6,000	6,000	5,700	57,000	6,000	20,000	21,000	0,500		2	6,005
6,000	6,000	5,700	57,000	6,000	20,000	21,000	1,000		2	6,010
6,000	6,000	5,700	57,000	6,000	20,000	21,000	1,500		2	6,015
8,000	8,000	7,700	63,000	8,000	26,000	27,000	2,000		2	8,000
8,000	8,000	7,700	63,000	8,000	26,000	27,000	0,500		2	8,005
8,000	8,000	7,700	63,000	8,000	26,000	27,000	1,000		2	8,010
10,000	10,000	9,500	72,000	10,000	30,000	32,000	3,000		2	10,000
10,000	10,000	9,500	72,000	10,000	30,000	32,000	0,500		2	10,005
10,000	10,000	9,500	72,000	10,000	30,000	32,000	1,500		2	10,015
12,000	12,000	11,500	83,000	12,000	36,000	38,000	4,000		2	12,000
12,000	12,000	11,500	83,000	12,000	36,000	38,000	2,000		2	12,020

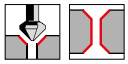
ISO	Härte	v_c	f_z (mm/z) / Ø							v_c	f_z (mm/z) / Ø						
			2	3	4	6	8	10	12		2	3	4	6	8	10	12
			a_p = 0,1xD					a_e = 0,1xD			a_p = 0,01xD					a_e max = 0,01xD	
P	≤850 N/mm²	**240**	0,030	0,045	0,060	0,090	0,120	0,150	0,180	**360**	0,021	0,032	0,042	0,063	0,084	0,105	0,126
	≥850 N/mm²	**200**	0,024	0,036	0,048	0,072	0,096	0,120	0,144	**300**	0,017	0,025	0,034	0,050	0,067	0,084	0,101
H	≤55 HRC	**120**	0,024	0,036	0,048	0,072	0,096	0,120	0,144	**200**	0,017	0,025	0,034	0,050	0,067	0,084	0,101
M	≤750 N/mm²	**160**	0,026	0,039	0,052	0,078	0,104	0,130	0,156	**240**	0,018	0,027	0,036	0,055	0,073	0,091	0,109
	≥750 N/mm²	**80**	0,020	0,030	0,040	0,060	0,080	0,100	0,120	**130**	0,013	0,020	0,026	0,039	0,052	0,065	0,078
S	Ni-Basis	**45**	0,020	0,030	0,040	0,060	0,080	0,100	0,120	**80**	0,013	0,020	0,026	0,039	0,052	0,065	0,078
	Ti-Basis	**100**	0,024	0,036	0,048	0,072	0,096	0,120	0,144	**150**	0,017	0,025	0,034	0,050	0,067	0,084	0,101
K	≤240 HB	**220**	0,030	0,045	0,060	0,090	0,120	0,150	0,180	**330**	0,021	0,032	0,042	0,063	0,084	0,105	0,126
	≥240 HB	**180**	0,026	0,039	0,052	0,078	0,104	0,130	0,156	**270**	0,018	0,027	0,036	0,055	0,073	0,091	0,109
N	≥7 % Si	**300**	0,030	0,045	0,060	0,090	0,120	0,150	0,180	**500**	0,021	0,032	0,042	0,063	0,084	0,105	0,126

Entgrat- und Faswerkzeuge

Entgratfräser 90°

Katalog-Nr. 53399

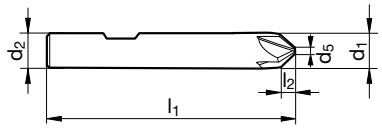
Super AF-90 | WN | VHM | TiAlZrN | 90° | js9 | HB | 0°



P	M	K	N	S	H
●	●	●	●	●	○

Arbeitsrichtwerte Seite 204-217

- Entgrat- und Anfasfräser, z.B. zur Bearbeitung von Werkstückkanten mit Faswinkel 90°
- höchste Vorschübe und bessere Oberfläche durch z = 6
- auch als Satz 322 044 176 erhältlich
- HA-Schaft auf Anfrage



d1 js9 mm	d2 h6 mm	d5 mm	l1 mm	l2 mm	Z	Code-Nr.
6,000	6,000	1,500	57,000	2,300	6	**6,000**
8,000	8,000	2,000	63,000	3,000	6	**8,000**
10,000	10,000	3,000	72,000	3,500	6	**10,000**
12,000	12,000	3,000	83,000	4,500	6	**12,000**
16,000	16,000	4,000	92,000	6,000	6	**16,000**
20,000	20,000	6,000	92,000	6,900	6	**20,000**

ISO	Härte	v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20	v_c	f_z (mm/z) / Ø 3	6	8	10	12	16	20
			Anfasen				a_p/a_e max = 0,25xD				Entgraten				a_p/a_e max = 0,05xD		
P	≤ 850 N/mm²	**192**	0,018	0,036	0,048	0,06	0,08	0,10	0,13	**250**	0,030	0,060	0,080	0,11	0,13	0,17	0,21
	≥ 850 N/mm²	**140**	0,016	0,032	0,042	0,06	0,07	0,09	0,12	**180**	0,026	0,053	0,070	0,10	0,12	0,16	0,20
M	≤ 750 N/mm²	**120**	0,013	0,025	0,034	0,05	0,05	0,07	0,09	**160**	0,021	0,042	0,056	0,08	0,09	0,12	0,15
	≥ 750 N/mm²	**80**	0,009	0,019	0,025	0,04	0,04	0,06	0,07	**100**	0,016	0,032	0,042	0,06	0,07	0,10	0,12
K	≤ 240 HB	**170**	0,017	0,033	0,044	0,06	0,07	0,09	0,12	**230**	0,028	0,056	0,074	0,10	0,12	0,16	0,20
N	≥ 7 % Si	**250**	0,023	0,047	0,062	0,08	0,10	0,13	0,17	**330**	0,039	0,078	0,104	0,14	0,17	0,22	0,28

Hartmetall-Reibwerkzeuge

VHM-Hochleistungs-Reibahlen

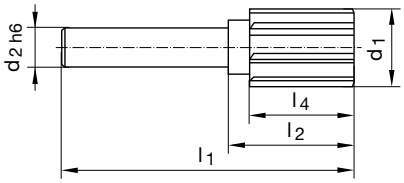
Katalog-Nr. 72874

SuperR-HS-KS | WN | VHM | AlTiN nano | H7 | R | HA | 0°

P	M	K	N	S	H
●	●	○		●	●

Arbeitsrichtwerte Seite 218

- für höchste Schnittwerte und hochwertige Bohrungsqualitäten
- mit axialem Kühlkanal, zur Bearbeitung von Grundbohrungen
- hohe Reibtiefenvarianz durch Einsatz der Schrumpfverlängerung (Kat.-Nr. 78719)
- Spannen in Hydrodehn- oder Schrumpffutter möglich



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	**Code-Nr.**
14,000	6,000	66,000	30,000	25,000	8	**14,000**
15,000	6,000	66,000	30,000	25,000	8	**15,000**
16,000	8,000	66,000	30,000	25,000	8	**16,000**
18,000	8,000	66,000	30,000	25,000	8	**18,000**
20,000	10,000	70,000	30,000	25,000	8	**20,000**
22,000	10,000	70,000	30,000	25,000	8	**22,000**
24,000	12,000	75,000	30,000	25,000	8	**24,000**
25,000	12,000	75,000	30,000	25,000	8	**25,000**
26,000	12,000	75,000	30,000	25,000	8	**26,000**
28,000	12,000	75,000	30,000	25,000	8	**28,000**
30,000	16,000	78,000	30,000	25,000	8	**30,000**
32,000	16,000	78,000	30,000	25,000	8	**32,000**
34,000	20,000	80,000	30,000	25,000	8	**34,000**
36,000	20,000	80,000	30,000	25,000	8	**36,000**
38,000	20,000	80,000	30,000	25,000	8	**38,000**
40,000	20,000	80,000	30,000	25,000	8	**40,000**
42,000	20,000	80,000	30,000	25,000	8	**42,000**

Hartmetall-Reibwerkzeuge

VHM-Hochleistungs-Reibahlen

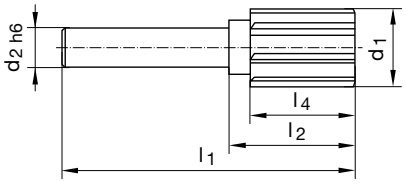
Katalog-Nr. 72875

SuperR-HS-KD | WN | VHM | AlTiN nano | H7 | R | HA | 0°

P	M	K	N	S	H
●	●	○		●	●

Arbeitsrichtwerte Seite 218

- für höchste Schnittwerte und hochwertige Bohrungsqualitäten
- mit radialer Kühlmittelzufuhr und Schälanschnitt zum gesicherten Spänetransport in die Vorschubrichtung bei der Bearbeitung von Durchgangsbohrungen
- hohe Reibtiefenvarianz durch Einsatz der Schrumpfverlängerung (Kat.-Nr. 78719)
- Spannen in Hydrodehn- oder Schrumpffutter möglich



d1 mm	d2 h6 mm	l1 mm	l2 mm	l4 mm	Z	**Code-Nr.**
14,000	6,000	66,000	30,000	25,000	8	**14,000**
15,000	6,000	66,000	30,000	25,000	8	**15,000**
16,000	8,000	66,000	30,000	25,000	8	**16,000**
18,000	8,000	66,000	30,000	25,000	8	**18,000**
20,000	10,000	70,000	30,000	25,000	8	**20,000**
22,000	10,000	70,000	30,000	25,000	8	**22,000**
24,000	12,000	75,000	30,000	25,000	8	**24,000**
25,000	12,000	75,000	30,000	25,000	8	**25,000**
26,000	12,000	75,000	30,000	25,000	8	**26,000**
28,000	12,000	75,000	30,000	25,000	8	**28,000**
30,000	16,000	78,000	30,000	25,000	8	**30,000**
32,000	16,000	78,000	30,000	25,000	8	**32,000**
34,000	20,000	80,000	30,000	25,000	8	**34,000**
36,000	20,000	80,000	30,000	25,000	8	**36,000**
38,000	20,000	80,000	30,000	25,000	8	**38,000**
40,000	20,000	80,000	30,000	25,000	8	**40,000**
42,000	20,000	80,000	30,000	25,000	8	**42,000**

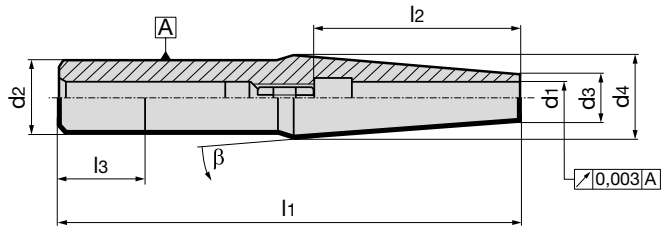
Schrumpffutter

Schrumpfverlängerungen

Katalog-Nr. 78719

WN | blank

- zur Aufnahme im Hydraulik-Dehnspannfutter oder Schrumpffutter
- geeignet für Innenkühlung
- für Werkzeugschäfte aus Hartmetall in Toleranz h6 (ab d1 14 mm auch HSS möglich)
- Sonderausführungen auf Anfrage
- auch geeignet zum Einsatz mit Kat.-Nr. 72874 und 72875



d1 h6 mm	d2 h6 mm	d3 mm	d4 mm	l1 mm	l2 ± mm	l3 mm	β °	Code-Nr.
3,00	20,00	10,00	20,00	160,00	30,00	50,00	4	**3,120**
3,00	20,00	10,00	20,00	200,00	30,00	50,00	4	**3,220**
4,00	20,00	10,00	20,00	160,00	35,00	50,00	4	**4,120**
4,00	20,00	10,00	20,00	200,00	35,00	50,00	4	**4,220**
5,00	20,00	10,00	20,00	160,00	40,00	50,00	4	**5,120**
5,00	20,00	10,00	20,00	200,00	40,00	50,00	4	**5,220**
6,00	12,00	10,00	12,00	125,00	38,00	45,00	3	**6,012**
6,00	20,00	14,00	20,00	160,00	36,00	50,00	4	**6,120**
6,00	20,00	14,00	20,00	200,00	36,00	50,00	4	**6,220**
6,00	12,00	10,00	12,20	200,00	38,00	45,00	3	**6,312**
8,00	14,00	12,00	14,00	125,00	38,00	45,00	3	**8,014**
8,00	20,00	14,00	20,00	160,00	36,00	50,00	4	**8,120**
8,00	20,00	14,00	20,00	200,00	36,00	50,00	4	**8,220**
8,00	14,00	12,00	14,20	200,00	38,00	45,00	3	**8,314**
10,00	16,00	14,00	16,00	160,00	42,00	48,00	3	**10,116**
10,00	25,00	20,00	25,00	160,00	41,00	56,00	4	**10,125**
10,00	25,00	20,00	25,00	200,00	41,00	56,00	4	**10,225**
10,00	16,00	14,00	16,20	250,00	42,00	48,00	3	**10,316**
12,00	20,00	16,00	20,00	160,00	47,00	50,00	3	**12,120**
12,00	25,00	20,00	25,00	160,00	46,00	56,00	4	**12,125**
12,00	25,00	20,00	25,00	200,00	46,00	56,00	4	**12,225**
12,00	20,00	16,00	20,20	250,00	47,00	50,00	3	**12,320**
14,00	25,00	20,00	29,00	160,00	46,00	56,00	4	**14,125**
14,00	32,00	20,00	32,00	200,00	46,00	60,00	4	**14,232**
16,00	25,00	22,00	33,00	160,00	49,00	56,00	4	**16,125**
16,00	25,00	22,00	25,00	160,00	50,00	56,00	3	**16,225**
16,00	32,00	24,00	32,00	200,00	49,00	60,00	4	**16,232**
16,00	25,00	22,00	25,20	250,00	50,00	56,00	3	**16,325**
18,00	32,00	27,00	32,00	160,00	49,00	60,00	4	**18,132**
18,00	32,00	27,00	32,00	200,00	49,00	60,00	4	**18,232**
20,00	32,00	27,00	32,00	160,00	51,00	60,00	4	**20,132**
20,00	32,00	27,00	32,00	200,00	51,00	60,00	4	**20,232**
20,00	32,00	27,00	32,00	160,00	52,00	60,00	3	**20,332**
20,00	32,00	27,00	32,20	250,00	52,00	60,00	3	**20,432**

HSS-Co Senkwerkzeuge

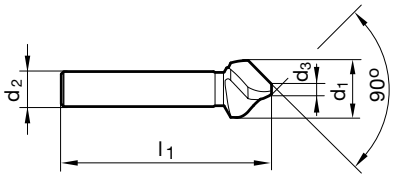
Kegelsenker 90°, spiralisiert

Katalog-Nr. 52348

V-NX | DIN 335 | C | HSS-Co | Al-TiN | 90° | R | Cyl

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 220



- 3 ungleiche, konvexe Schneiden
- vibrationsarme Schneidverhältnisse
- für runde und ratterfreie Senkungen
- deutlich reduzierte Vorschubkraft notwendig
- universell einsetzbar

d1 mm	d2 mm	d3 mm	l1 mm	Z	Code-Nr.
6,300	5,000	1,500	45,000	3	**6,300**
8,000	6,000	2,000	50,000	3	**8,000**
8,300	6,000	2,000	50,000	3	**8,300**
10,000	6,000	2,500	50,000	3	**10,000**
10,400	6,000	2,500	50,000	3	**10,400**
11,500	8,000	2,800	56,000	3	**11,500**
12,400	8,000	2,800	56,000	3	**12,400**
15,000	10,000	3,200	60,000	3	**15,000**
16,500	10,000	3,200	60,000	3	**16,500**
19,000	10,000	3,500	63,000	3	**19,000**
20,500	10,000	3,500	63,000	3	**20,500**
23,000	10,000	3,800	67,000	3	**23,000**
25,000	10,000	3,800	67,000	3	**25,000**
31,000	12,000	4,200	71,000	3	**31,000**
40,000	12,000	10,000	75,000	3	**40,000**

HSS-Co Senkwerkzeuge

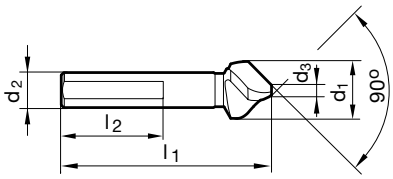
Kegelsenker 90°, spiralisiert

Katalog-Nr. 52350

V-NX | DIN 335 | C | HSS-Co | Al-TiN | 90° | R | 3

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 220



- 3-Flächen-Schaft verhindert Durchrutschen im Bohrfutter
- 3 ungleiche, konvexe Schneiden
- optimal für Handbohrmaschinen
- vibrationsarme Schneidverhältnisse
- für runde und ratterfreie Senkungen
- deutlich reduzierte Vorschubkraft notwendig
- universell einsetzbar

d1 mm	d2 mm	d3 mm	l1 mm	l2 mm	Z	**Code-Nr.**
6,300	5,000	1,500	45,000	30,000	3	**6,300**
8,000	6,000	2,000	50,000	30,000	3	**8,000**
8,300	6,000	2,000	50,000	30,000	3	**8,300**
10,000	6,000	2,500	50,000	30,000	3	**10,000**
10,400	6,000	2,500	50,000	30,000	3	**10,400**
11,500	8,000	2,800	56,000	30,000	3	**11,500**
12,400	8,000	2,800	56,000	30,000	3	**12,400**
15,000	10,000	3,200	60,000	30,000	3	**15,000**
16,500	10,000	3,200	60,000	30,000	3	**16,500**
19,000	10,000	3,500	63,000	30,000	3	**19,000**
20,500	10,000	3,500	63,000	30,000	3	**20,500**
23,000	10,000	3,800	67,000	30,000	3	**23,000**
25,000	10,000	3,800	67,000	30,000	3	**25,000**
31,000	12,000	4,200	71,000	30,000	3	**31,000**
40,000	12,000	10,000	75,000	30,000	3	**40,000**

HSS-Co Senkwerkzeuge

Kegelsenkersätze 90°, spiralisiert

V-NX | DIN 335 | C | HSS-Co | Al-TiN | 90° | R | Cyl

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 220

- bestehend aus Katalog-Nr. 52348
- 3 ungleiche, konvexe Schneiden
- vibrationsarme Schneidverhältnisse
- für runde und ratterfreie Senkungen
- deutlich reduzierte Vorschubkraft notwendig
- universell einsetzbar

Katalog-Nr. 52398

Code-Nr.	Ø-Bereich mm	Stück/Satz
1,000	**6,3/8,3/10,4/12,4/16,5/20,5**	6

HSS-Co Senkwerkzeuge

Kegelsenkersätze 90°, spiralisiert

V-NX | DIN 335 | C | HSS-Co | Al-TiN | 90° | R | 3

P	M	K	N	S	H
●	●	●	○	○	

Arbeitsrichtwerte Seite 220

- bestehend aus Katalog-Nr. 52350
- 3-Flächen-Schaft verhindert Durchrutschen im Bohrfutter
- 3 ungleiche, konvexe Schneiden
- optimal für Handbohrmaschinen
- vibrationsarme Schneidverhältnisse
- für runde und ratterfreie Senkungen
- deutlich reduzierte Vorschubkraft notwendig
- universell einsetzbar

Katalog-Nr. 52399

Code-Nr.	Ø-Bereich mm	Stück/Satz
1,000	**6,3/8,3/10,4/12,4/16,5/20,5**	6

ARBEITS-RICHTWERTE

SuperV-Bohrer

Arbeitsrichtwerte

Vorschubreihen

Werkzeug-Ø mm	Code-Buchstabe A	B	C	D	E	F	G	H	I
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

Vorschübe f (mm/U)

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- **S** für hochfeste Werkstoffe
- **U** für Universalbearbeitung, Kohlenstoffstähle
- **VA** für rostfreie Werkstoffe
- **X** für Stahlbearbeitung

Kühlmitteleinsatz:

Schneidöl, hochaktiviert ■
Bohrölemulsion ■
ohne Schmiermittel □
nur Luftkühlung [!]

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		[!]
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

≤3×D Bohrtiefe

≤5×D Bohrtiefe

Katalog-Nr.	51673	51676	51670	51687	51681	51674	71791
Schneidstoff	VHM	VHM	VHM	VHM	VHM	VHM	VHM
HM-Anwendgsgr.	K/P	K/P	K/P	K/P	K/P	K/P	K/P
Oberfläche	TiAlN nano	TiAlN nano	TiAlN nano	TiAlN nano	TiAlN nano	TiAlN nano	blank
DIN/Form	6537K	6537K	6537K	6537L	6537L	6537L	6537L
Typ	U	U	VA	U	U	VA	Al
Innenkühlung	ohne	mit	mit	ohne	mit	mit	mit
Katalogseite	16	20	22	20	32	34	30







vc m/min	VR-Code	vc m/min	VR-Code	vc m/min	VR-Code	vc m/min	VR-Code	vc m/min	VR-Code	vc m/min	VR-Code	vc m/min	VR-Code
130	G	145	G			130	G	145	G				
110	F	120	F			110	F	120	F				
145	H	170	H			145	H	170	H				
110	G	145	H			110	G	145	H				
120	G	130	H			120	G	130	H				
110	G	125	G			110	G	125	G				
105	G	120	G			105	G	120	G				
105	G	120	G			105	G	120	G				
100	F	105	G			100	F	105	G				
130	H	145	H			130	H	145	H				
120	G	120	G			120	G	120	G				
85	E	85	E			85	E	85	E				
100	F	110	G			100	F	105	G				
90	E	105	E			90	E	100	E				
65	F	80	F			65	F	70	F				
55	E	65	E			55	E	55	E				
55		60	D			55		60	E				
45	C	60	C			45	C	60	C				
40	A	55	C			35	A	55	C				
20	A	35	B			20	A	35	B				
40	B	60	E	80	E	45	B	60	E	80	E		
15	A	55	B	60	B-C	15	A	55	B	60	B-C		
35	B	45	E	80	E	35	B	50	E	80	E		
210	H	210	I			210	H	195	I				
155	H	160	I			155	H	160	I				
155	G	140	I			145	G	140	I				
125	G	130	H			125	G	130	H				
35	C	40	C			35	C	40	C				
25	D	35	D	30	D	25	D	35	D	30	D		
15	A	45	D	45	D	15	A	45	D	45	D		
15	A	40	C	40	C	15	A	40	C	40	C		
260	I	310	I			260	I	310	I			350	I
260	I	310	I			260	I	310	I			350	I
220	H	260	I			235	I	260	I			320	H
180	H	220	I			170	H	220	I			280	G
260	H	280	H			260	H	280	H			320	G
105	G	125	G			105	G	125	G			190	G
270	H	325	H			270	H	325	H			160	F
180	G	220	G			180	G	220	G			160	F
105	F	125	G			105	F	125	G			160	F
85	F	105	F			85	F	105	F			160	F
80	E	90	F			80	E	90	F			150	F
60	E	80	F			60	E	80	F			150	F
												100	C
												100	C
												100	B

SuperV-Bohrer

Arbeitsrichtwerte

Vorschubreihen

Code-Buchstabe	A	B	C	D	E	F	G	H	I
Werkzeug-Ø mm									
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

Vorschübe f (mm/U)

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- **S** für hochfeste Werkstoffe
- **U** für Universalbearbeitung, Kohlenstoffstähle
- **VA** für rostfreie Werkstoffe
- **X** für Stahlbearbeitung

Kühlmitteleinsatz:

Schneidöl, hochaktiviert ■
Bohrölemulsion ■
ohne Schmiermittel □
nur Luftkühlung [!]

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		[!]
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

≤3×D Bohrtiefe

≤5×D

≤7×D

Katalog-Nr.	51750	51752	51753	51754	51755	51756
Schneidstoff	VHM	VHM	VHM	VHM	VHM	VHM
HM-Anwendgsgr.	K/P	K/P	K/P	K/P	K/P	K/P
Oberfläche	TiAlSiN	TiAlSiN	TiAlSiN	TiAlSiN	TiAlSiN	TiAlSiN
DIN/Form	6537K	6537K	6537K	6537L	6537L	WN
Typ	S	S	S	S	S	S
Innenkühlung	ohne	mit	mit	mit	mit	mit
Katalogseite	18	26	28	38	40	44






v_c m/min	VR-Code	v_c m/min	VR-Code	VR-Code	v_c m/min	VR-Code	VR-Code	v_c m/min	VR-Code
130	G	145	G	G	145	G	G	145	F
110	F	120	F	F	120	F	F	120	E
145	H	170	H	H	170	H	H	170	G
110	G	145	H	H	145	H	H	145	G
120	G	130	H	H	130	H	H	130	G
110	G	125	G	G	125	G	G	125	F
105	G	120	G	G	120	G	G	120	F
105	G	120	G	G	120	G	G	120	F
100	F	105	G	G	105	G	G	105	F
130	H	145	H	H	145	H	H	145	G
120	G	120	G	G	120	G	G	120	F
85	E	85	E	E	85	E	E	85	D
100	F	110	G	G	110	G	G	110	F
90	E	105	E	E	105	E	E	105	D
65	F	80	F	F	80	F	F	80	E
55	E	65	E	E	65	E	E	65	D
55	D	60	D	D	60	D	D	60	C
45	C	60	C	C	60	C	C	60	B
40	A	55	C	C	55	C	C	55	B
20	A	35	B	B	35	B	B	35	A
25	D	35	D	D	35	D	D	35	C
15	A	45	D	D	45	D	D	45	C
15	A	40	C	C	40	C	C	40	D

SuperV-Bohrer
Arbeitsrichtwerte

Vorschubreihen

Vorschübe f (mm/U)

Werkzeug-Ø mm	Code-Buchstabe A	B	C	D	E	F	G	H	I
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- **S** für hochfeste Werkstoffe
- **U** für Universalbearbeitung, Kohlenstoffstähle
- **VA** für rostfreie Werkstoffe
- **X** für Stahlbearbeitung

Einsatzhinweise SuperV-T-Bohrer:
Um bei tiefen Bohrungen optimale Bearbeitungsergebnisse zu erzielen, empfehlen wir:

1. Herstellen einer zylindrischen Pilotbohrung (Toleranz F9), Bohrtiefe 1 x D mit unseren SuperV-Bohrern Typ U bzw. VA (140° Spitzenwinkel, Ø-Toleranz m7). Alternativ kann auch der Pilotbohrfräser Artikel-Nr. 54700 eingesetzt werden.
2. Einfahren in Pilotbohrung: Drehzahl ca. 300 U/min, Vorschub ca. 500 mm/min.
3. Einstellen des Kühlschmierstoffdruckes und der Drehzahl.
4. Kontinuierliches Bohren auf volle Bohrtiefe ohne Entspanzyklus.
5. Bei Durchgangsbohrungen mit geradem (90°) Austritt, v_f ca. 1 mm vor dem Durchbrechen auf 50% reduzieren.
6. Bei Durchgangsbohrungen mit schrägem Austritt, v_f ca. 1 mm vor dem Durchbrechen auf 40% reduzieren.
7. Nach Erreichen der Bohrtiefe Drehzahl und Kühlschmierstoff abschalten, Ausfahren im Eilgang.

Kühlmitteleinsatz:
Schneidöl, hochaktiviert ■
Bohrölemulsion ■
ohne Schmiermittel □
nur Luftkühlung [!]

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		[!]
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

	≤5×D	≤7×D	≤15×D	≤20×D	≤25×D	≤30×D	≤40×D
Katalog-Nr.	51786	51791	51764	51765	51766	51767	51768
Schneidstoff	VHM	VHM	VHM	VHM	VHM	VHM	VHM
HM-Anwendgsgr.	K/P	K/P	K/P	K/P	K/P	K/P	K/P
Oberfläche	TiAlN nano	TiAlN nano	AlTiN	AlTiN	AlTiN	AlTiN	AlTiN
DIN/Form	6537L	WN	WN	WN	WN	WN	WN
Typ	X	X	T	T	T	T	T
Innenkühlung	mit	mit	mit	mit	mit	mit	mit
Katalogeseite	36	42	45	46	47	48	49







v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code
200	H	180	H	110	H	110	H	100	H	80	G	80	G
200	G	180	G	110	H	110	H	100	H	80	G	80	G
200	H	180	H	120	H	120	H	120	H	100	H	100	H
200	H	180	H	120	H	120	H	100	H	100	H	100	H
180	H	160	H	110	F	110	F	110	F	110	F	110	F
160	H	140	H	110	H	110	H	100	H	80	G	80	G
130	H	120	H	100	G	100	G	100	G	80	G	80	G
120	H	110	H	110	G	110	G	100	G	80	G	80	F-G
120	G	110	G	110	F	110	F	100	F	80	F	80	F
180	H	160	H	110	H	110	H	100	H	80	G	80	G
120	H	110	H	110	G	110	G	100	G	80	F	80	F
110	G	100	G	110	F	110	F	100	F	80	F	80	F
110	G	100	G	100	E	100	E	80	E	80	E	80	E
100	E	90	E	80	E	80	E	60	E	60	E	60	E
90	G	80	G	100	F-G	100	F	90	F	80	F	80	F-G
65	F	60	F	80	E	80	E	70	D	70	D	70	D
60	E	55	E	50	E	50	E	50	D	50	D	50	D
60	E	55	E	50	E	50	E	50	D	50	D	50	D
55	C	45	C	50	D	50	D	50	D	50	D	50	D
80	E	70	E	100	E	100	E	100	E	80	E	80	E
				70	B-C	60	C	60	C	60	C	70	B-C
60	E	50	E	100	E	100	E	100	E	80	E	80	E
180	I	165	I	140	H	140	H	130	H	120	H	120	H
160	I	145	I	100	H	100	H	90	H	80	H	80	H
140	I	130	I	140	H	140	H	130	H	120	H	120	H
140	H	130	H	100	H	100	H	90	H	80	H	80	H
140	H	130	H	100	F	100	F	90	F	80	F	80	F
140	H	130	H	100	F	100	F	90	F	80	F	80	F
80	G	70	G	90	H	90	H	80	H	70	H	70	H
80	G	70	G										
30	D	25	D	30	B	30	B	30	B	30	B	30	B
40	D	35	D										
35	C	30	C										
				120	A	120	A	120	A	120	A	120	A
				120	H	120	H	110	H	100	H	100	H

Arbeitsrichtwerte

Spiralbohrer

Arbeitsrichtwerte

Vorschubreihen

Werkzeug-Ø mm	Code-Buchstabe A	B	C	D	E	F	G	H	I
0,50	0,004	0,006	0,007	0,008	0,010	0,012	0,014	0,016	0,019
1,00	0,006	0,008	0,012	0,014	0,016	0,018	0,020	0,023	0,025
2,00	0,020	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125
2,50	0,025	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160
3,15	0,032	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,160
4,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,200
5,00	0,040	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250
6,30	0,050	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315
8,00	0,063	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,315
10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

Vorschübe f (mm/U)

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Kühlmitteleinsatz:

Schneidöl, hochaktiviert ■
Bohrölemulsion ■
ohne Schmiermittel □
nur Luftkühlung [!]

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		[!]
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

	≤5×D	≤3×D	~3×D	~5×D	~5×D
Katalog-Nr.	**51290**	**51146**	**61131**	**61232**	**71018**
Schneidstoff	**VHM**	**VHM**	**HSS-Co**	**HSS-Co**	**M42**
HM-Anwendgsgr.	K/P	K/P			
Oberfläche	TiAlN nano	TiAlN nano	AlTiZrN	AlTiZrN	Bronze-VAP
DIN/Form	**WN**	**6537K**	**1897**	**338**	**338**
Typ	N	H	V18	V18	V16
Innenkühlung	**ohne**	**ohne**	**ohne**	**ohne**	**ohne**
Katalogseite	50	51	56	58	60





v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code
100	E			38	F	38	F	35	**F**
90	E			33	E	33	E	30	E
100	**F**			44	F	44	F	40	**F**
90	**D**			42	E	42	E	40	E
100	E			44	E	44	E	40	**E**
90	E			44	E	44	E	40	E
80	E							35	D
80	E							20	D
		80	F					16	C
100	F			40	F	40	F	36	**F**
80	E							20	C
		65	D					15	C
65	E							16	**D**
		80	D					12	**C**
65	C							15	**C**
								12	**C**
								15	**C**
30	C							8	**B**
20	B	40	**B**					4	**A**
		30	**A**						
30	**B**			20	**D**	20	**D**	18	**C**
20	**A**			15	**C**	15	**C**	14	**C**
30	**B**			18	**C**	18	**C**	16	**C**
115	**E**	90	H	30	F	30	F	35	**F**
100	**E**	80	H	30	F	30	F	30	F
90	E	80	H					30	**F**
80	**E**	70	G					28	F
		30	B					10	**C**
20	C			H	A	H	A	8	A
15	**A**			12	**B**	12	**B**	10	B
15	**A**			H	**B**	H	**B**	6	B
260	**H**			90	G	90	G	90	**G**
260	**H**			90	G	90	G	90	G
195	**G**			80	G	80	G	80	**G**
155	**G**			70	F	70	F	70	**F**
235	**F**			70	F	70	F	70	**F**
100	**F**			70	E	70	E	70	**E**
235	F			60	E	60	E	60	**E**
235	F			40	E	40	E	40	**E**
155	F			35	D	35	D	35	**D**
155	F			33	D	33	D	33	**D**
90	E			20	**D**	20	**D**	20	**D**
65	D			15	**D**	15	**D**	15	**D**
50	E							20	**D**
65	D			30	D	30	D	30	**E**
100	D								

Tieflochbohrer

Arbeitsrichtwerte

Vorschubreihen

Werkzeug-Ø mm	Code-Buchstabe K	L	M	N	O	P	Q	R
1,50	0,002	0,004	0,006	0,008	0,012	0,020	0,032	0,045
2,00	0,003	0,005	0,007	0,010	0,016	0,028	0,046	0,055
2,50	0,004	0,006	0,008	0,012	0,018	0,030	0,054	0,070
4,00	0,005	0,007	0,010	0,016	0,025	0,043	0,065	0,085
6,00	0,007	0,009	0,013	0,024	0,035	0,061	0,085	0,120
8,00	0,010	0,014	0,022	0,032	0,045	0,068	0,100	0,150
10,00	0,012	0,016	0,028	0,040	0,055	0,075	0,120	0,160
14,00	0,020	0,025	0,035	0,050	0,065	0,085	0,130	0,180
18,00	0,025	0,030	0,040	0,055	0,070	0,095	0,145	0,200
20,00	0,026	0,035	0,045	0,060	0,080	0,110	0,180	0,250
24,00	0,027	0,036	0,047	0,065	0,085	0,130	0,185	0,300
28,00	0,028	0,038	0,049	0,068	0,090	0,140	0,195	0,350
30,00	0,030	0,040	0,050	0,070	0,100	0,150	0,200	0,400
35,00	0,035	0,045	0,055	0,075	0,120	0,180	0,250	0,450
40,00	0,040	0,050	0,060	0,080	0,150	0,200	0,300	0,500

Vorschübe f (mm/U)

Kühlmitteleinsatz:

Schneidöl, hochaktiviert, grenzflächenaktives Schmiermittel mit wirksamen Stoffen (Additiven), die chemisch reagieren und dabei einen besonders haftenden und verschleißmindernden Schmierfilm erzeugen. ■

Bohrölemulsion ■

ohne Schmiermittel □

nur Luftkühlung ▣

STOP

Sämtliche Tieflochbohrer müssen beim Anbohren geführt werden.
Tieflochbohrer dürfen nie mit voller Drehzahl frei im Maschinenraum bewegt werden.

Bitte beachten Sie die Anwendungsrichtlinien!

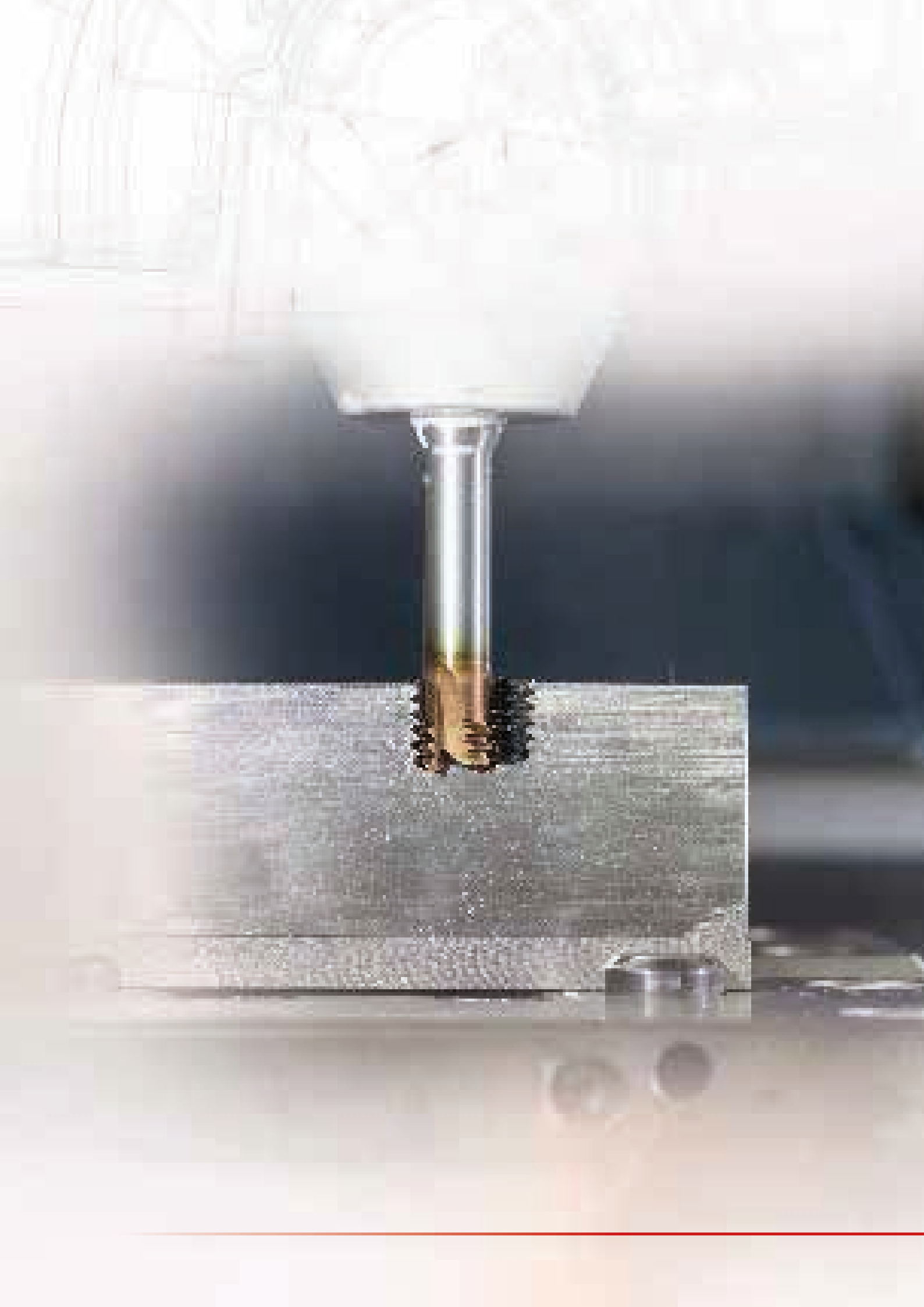
Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		▣
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

Katalog-Nr.	**65030** **65031** **65032** **65033**
Schneidstoff	**HM**
Oberfläche	TiN
Typ	**SuperT-NXL**
Katalogseite	52/53/54/55

v_c m/min	VR-Code
100	N
85	N
90	N
80	N
90	M
80	M
75	M
75	M
65	M
80	N
75	M
65	M
75	M
65	M
75	L
65	L
55	K
65	L
30	L
25	K
55	M
45	M
35	M
85	O
80	O
80	N
70	N
55	M
35	K
35	K
30	K
150	P
120	O
150	P
130	P
110	P
75	N
120	Q
90	Q
95	P
75	P
70	P
60	P
75	N
70	N
60	M
50	M

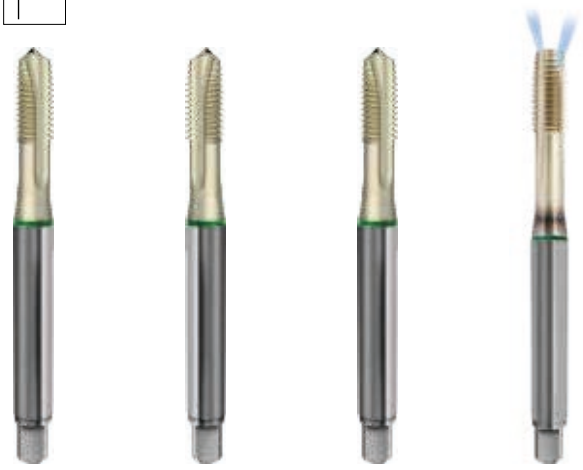
SuperT

- Einlippenbohrer für höchste Präzision
- Bohrtiefen bis zu 80xD mit nur einem Werkzeug
- herstellbar ab 0,9 mm Nenn-Ø
- mit und ohne Spanteilernut
- universell einsetzbar



Auswahlempfehlungen für Gewindebohrer

PREMIUM



Bohrungsart				
Schneidstoff	HSS-E	HSS-E	HSS-E-PM	HSS-E-PM
Schneidrichtung	rechts	links	rechts	rechts
Typ	ProduktivN-X	ProduktivN-X	ProduktivN-X	ProduktivN-X
Form	B	B	B	B
Kühlung	außen	außen	außen	radial
Oberfläche	AlTiZrN	AlTiZrN	AlTiZrN	AlTiZrN

Gewindeart	Baumaße nach DIN 2184-1	Toleranzfeld	Katalog-Nr./Ø-Bereich/Seite			
M	DIN 371/DIN 376	6HX	53733 M2 - M42 Seite 68	53734 M2 - M30 Seite 69	53735 M3 - M20 Seite 70	53736 M5 - M30 Seite 71
		6H+0,1	53737 M2 - M30 Seite 72			
		6GX	53738 M2 - M30 Seite 73			
	WN überlang	6HX	53739 M3 - M20 Seite 74			
MF	DIN 374	6HX	53778 M3x0,35 - M24x2 Seite 93		53789 M8x1 - M24x1.5 Seite 94	53790 M8x1 - M24x1.5 Seite 95
		6GX	53779 M6x0.75 - M24x1.5 Seite 96			
UNC	DIN 2184-1	2BX	53782 No.2-56 - 1-8 Seite 103			
UNF	DIN 2184-1	2BX	53784 No.2-64 - 1-12 Seite 105			

ECONOMY

ECONOMY CLASS

die günstigste Innengewindeherstellung

BUSINESS

BUSINESS CLASS

die wirtschaftliche Innengewindeherstellung

PREMIUM

PREMIUM CLASS

die optimale Innengewindeherstellung

Auswahlempfehlungen für Gewindebohrer

	Materialgruppe	Zugfestigkeit	Materialbeispiel	Werkstoff-Nr.	Empfohlene Schnittgeschwindigkeit v_c m/min			
P	Bau-/Automatenstähle, unleg. Vergütungs-/ Einsatzstähle	≤800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	**20**	**20**	**25**	**25**
P	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800 - 1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	**15**	**15**	**20**	**20**
P	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800 - 1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	**10**	**10**	**15**	**15**
M	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	≤1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	**12**	**12**	**15**	**15**
M	Rost- und säurebeständige Stähle, martensitisch	≤1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	**10**	**10**	**12**	**12**
M	Duplex und Super Duplex	≤1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWN25-7-4	1.4462 1.4410 1.4501	6	6	8	8
K	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.6030	20	20	25	25
K	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.7040 0.7060 0.7070	20	20	25	25
K	ADI GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		10	10	15	15
N	Aluminium, Aluminium-Knetlegierungen	≤450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.0250 32315 3.4335	10	10	12	12
N	Aluminium-Gusslegierungen	≤600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	20	20	25	25
N	Magnesium-Legierungen	≤500 N/mm²	GDMgAl8Zn1	3.5812.08				
N	Kupfer und Kupferlegierungen	langspanend	CuZn20 CuZn37Pb0,5	2.0250 2.0332	20	20	25	25
N	Kupfer und Kupferlegierungen	kurzspanend	CuZn39Pb2 CuZn43Pb2	2.0380 2.0410	20	20	25	25
N	Kupfer-Sonderleg.	≤1400 N/mm²	Ampco		10	10	15	15
N	Kunststoffe [Thermo-, Duroplaste]	langspanend kurzspanend	PMMA, POM,PVC Pertinax					
S	Titan und Titanlegierungen	≤ 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.702<5 3.7115 3.7165	3	3	5	5
S	Nickel-, Kobalt-, und Eisen-Legierungen	≤ 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic 105	2.4610 2.4668 2.4634	2	2	3	3
H	hochfeste Stähle, gehärtete Stähle	45 - 55 HRC						
H		55 - 62 HRC						

Auswahlempfehlungen für Gewindebohrer

Bohrungsart					
Schneidstoff	HSS-E	HSS-E	HSS-E-PM	HSS-E-PM	HSS-E
Schneidrichtung	rechts	links	rechts	rechts	rechts
Typ	IntensivN-X	IntensivN-X	IntensivN-X	IntensivN-X	IntensivN-X
Form	C	C	C	C	E
Kühlung	außen	außen	außen	axial	außen
Oberfläche	TiAlN-H	TiAlN-H	TiAlN-H	TiAlN-H	TiAlN-H

Gewindeart	Baumaße nach DIN 2184-1	Toleranzfeld	Katalog-Nr./Ø-Bereich/Seite				
M	DIN 371/DIN 376	6HX	53746 M2 - M42 Seite 75	53747 M2 - M30 Seite 76	53748 M3 - M20 Seite 77	53749 M5 - M30 Seite 78	53760 M2 - M30 Seite 79
		6H+0,1	53750 M2 - M30 Seite 80				
		6GX	53751 M2 - M30 Seite 81				
	WN überlang	6HX	53752 M3 - M20 Seite 82				
MF	DIN 374	6HX	53780 M3x0,35 - M24x2 Seite 97		53791 M8x1 - M24x1.5 Seite 98	53792 M8x1 - M24x1.5 Seite 99	53770 M6x0.75 - M24x1.5 Seite 100
		6GX	53781 M6x0.75 - M24x1.5 Seite 101				
UNC	DIN 2184-1	2BX	53783 No.2-56 - 1-8 Seite 104				
UNF	DIN 2184-1	2BX	53785 No.2-64 - 1-12 Seite 106				
G	DIN 5156	DIN ISO 228					53775 G1/16 - G1 Seite 107

Auswahlempfehlungen für Gewindebohrer

	Materialgruppe	Zugfestigkeit	Materialbeispiel	Werkstoff-Nr.	Empfohlene Schnittgeschwindigkeit v_c m/min				
P	Bau-/Automatenstähle, unleg. Vergütungs-/ Einsatzstähle	≤800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	**20**	**20**	**25**	**25**	**20**
P	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800 - 1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	**15**	**15**	**20**	**20**	**15**
P	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800 - 1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	**10**	**10**	**12**	**12**	**10**
M	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	≤1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	**12**	**12**	**15**	**15**	**12**
M	Rost- und säurebeständige Stähle, martensitisch	≤1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	**10**	**10**	**12**	**12**	**10**
M	Duplex und Super Duplex	≤1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWN25-7-4	1.4462 1.4410 1.4501	6	6	8	8	6
K	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.6030	20	20	25	25	20
K	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.7040 0.7060 0.7070	20	20	25	25	20
K	ADI GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		10	10	15	15	10
N	Aluminium, Aluminium-Knetlegierungen	≤450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.0250 32315 3.4335	10	10	12	12	10
N	Aluminium-Gusslegierungen	≤600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	20	20	25	25	20
N	Magnesium-Legierungen	≤500 N/mm²	GDMgAl8Zn1	3.5812.08					
N	Kupfer und Kupferlegierungen	langspanend	CuZn20 CuZn37Pb0,5	2.0250 2.0332	20	20	25	25	20
N	Kupfer und Kupferlegierungen	kurzspanend	CuZn39Pb2 CuZn43Pb2	2.0380 2.0410	20	20	25	25	20
N	Kupfer-Sonderleg.	≤1400 N/mm²	Ampco		10	10	15	15	10
N	Kunststoffe [Thermo-, Duroplaste]	langspanend kurzspanend	PMMA, POM,PVC Pertinax						
S	Titan und Titanlegierungen	≤ 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.702<5 3.7115 3.7165	3	3	5	5	3
S	Nickel-, Kobalt-, und Eisen-Legierungen	≤ 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic 105	2.4610 2.4668 2.4634	2	2	3	3	2
H	hochfeste Stähle, gehärtete Stähle	45 - 55 HRC							
H	hochfeste Stähle, gehärtete Stähle	55 - 62 HRC							

Auswahlempfehlungen für Gewindebohrer

Bohrungsart					
Schneidstoff	HSS-E	HSS-E-PM	HSS-E	HSS-E	HSS-E-PM
Typ	Produktiv H	Produktiv H	Intensiv H	Intensiv H	Intensiv H
Form	B	B	C	C	C
Oberfläche	TiCN	TiCN	nitriert	TiCN	TiAlN

Gewindeart	Baumaße nach DIN 2184-1	Toleranzfeld	Katalog-Nr./Ø-Bereich/Seite				
M	DIN 371	ISO 2 6H	53642 M2 - M10 Seite 86	53640 M3 - M10 Seite 87	73661 M3 - M10 Seite 88	53661 M2 - M10 Seite 90	53664 M3 - M10 Seite 91
	DIN 376	ISO 2 6H	53642 M12 - M20 Seite 86	53640 M12 - M16 Seite 87	73664 M12 - M20 Seite 89	53661 M12 - M20 Seite 90	53664 M12 - M20 Seite 91
MF	DIN 374	ISO 2 6H			73647 M8x0.75 - M24x1.5 Seite 102		

	Materialgruppe	Zugfestigkeit	Materialbeispiel	Werkstoff-Nr.	Empfohlene Schnittgeschwindigkeit v_c m/min				
P	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	≤800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718					
	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800 - 1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	6	10			
	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800 - 1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	**12**	**15**	**10**	**12**	**6**

Auswahlempfehlungen für Gewindebohrer



Bohrungsart			max. 1,5 x D
Schneidstoff	HSS-E	HSS-E	HSS-E-PM
Typ	Produktiv N	H	H
Form	B	C	D
Oberfläche	TiN	TiCN	TiCN

Gewindeart	Baumaße nach DIN 2184-1	Toleranzfeld	Katalog-Nr./Ø-Bereich/Seite		
M	DIN 371	ISO 2 6H	63033 M3 - M10 Seite 83		
		6HX			53676 M3 - M16 Seite 92
	DIN 376	ISO 2 6H	63033 M12 - M20 Seite 83		
		6HX		53646 M16 - M39 Seite 84	
	~ DIN 376	6HX		53647 (WN, Überlänge) M16 - M39 Seite 85	

	Materialgruppe	Zugfestigkeit	Materialbeispiel	Werkstoff-Nr.	Empfohlene Schnittgeschwindigkeit v_c m/min		
P	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	≤800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	**15**		
	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800 - 1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	**12**	**15**	
	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800 - 1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	8	**12**	
K	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.6030		**25**	
	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.7040 0.7060 0.7070		**20**	
	ADI GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400			**15**	
H	Hochfeste Stähle, gehärtete Stähle	45-55 HRC	Hardox 500				**3**
		55-62 HRC					

Auswahlempfehlungen für Gewindeformer

Bohrungsart			
Schneidstoff	HSS-E-PM	HSS-E-PM	HSS-E-PM
Typ	Durativ N-X	Durativ N-X	Durativ N-X
Form	C mit Schmiernuten	C mit Schmiernuten	E
Oberfläche	TiCN	TiCN	TiCN
Kühlung	außen	radial	axial*

Gewindeart	Baumaße nach DIN 2184-1	Toleranzfeld	Katalog-Nr./Ø-Bereich/Seite		
M	~ DIN 371	4/6HX	53630 M1-M20 Seite 108	53610 M5-M20 Seite 114	53618 M2*-M10 Seite 115
		6GX	53631 M2-M10 Seite 109		
	~ DIN 376	6HX	53630 M12-M20 Seite 108		53618 M12-M20 Seite 115
		6GX	53631 M12-M20 Seite 109		
MF	~ DIN 374	6HX	53632 M3x0,35-M24x2 Seite 110	53612 M8x1-M20x1.5 Seite 116	53619 M8x1-M20x1.5 Seite 117
UNC	~ DIN 371 ~ DIN 376	2BX	53633 No.4-40 - 3/4-10 Seite 111		
UNF	~ DIN 374	2BX	53634 No.4-48 - 3/4-16 Seite 112		
G	DIN 2189	X	53635 G1/8 - G1/2 Seite 113		

Alle Werkzeuge ab M2 mit Schmiernuten.

*ab M5 mit IKZ

Auswahlempfehlungen für Gewindeformer

		Materialgruppe	Zugfestigkeit	Materialbeispiel	Werkstoff-Nr.	Empfohlene Schnittgeschwindigkeit v_c m/min		
P	P1	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	≤800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	25	25	25
	P2	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800 - 1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	25	25	25
	P3	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800 - 1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	15	15	15
M	M1	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	≤1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	15	15	15
	M2	Rost- und säurebeständige Stähle, martensitisch	≤1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	10	10	10
	M3	Duplex und Super Duplex	≤1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWN25-7-4	1.4462 1.4410 1.4501	6	6	6
K	K1	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.6030			
	K2	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.7040 0.7060 0.7070	30	30	30
	K3	ADI GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		25	25	25
N	N1	Aluminum, Aluminium-Knetlegierungen	≤450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.0250 3.2315 3.4335	15	15	15
	N2	Aluminium-Gusslegierungen	≤600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	30	30	30
	N3	Magnesium-Legierungen	≤500 N/mm²	GDMgAl8Zn1	3.5812.08			
	N4	Kupfer und Kupferlegierungen	langspanend	CuZn20 CuZn37Pb0,5	2.0250 2.0332	30	30	30
			kurzspanend	CuZn39Pb2 CuZn43Pb2	2.0380 2.0410			
	N5	Kupfer-Sonderlegierungen	≤1400 N/mm²	Ampco				
	N6	Kunststoffe [Thermoplaste, Duroplaste]	langspanend kurzspanend	PMMA, POM, PVC Pertinax				
S	S1	Titan und Titan-Legierungen	≤1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.7025 3.7115 3.7165	8	8	8
	S2	Nickel-, Kobalt-, und Eisen-Legierungen	≤1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic 105	2.4610 2.4668 2.4634	8	8	8
H	H1	Hochfeste Stähle, gehärtete Stähle	45 - 55 HRC					
	H2		55 - 62 HRC					

Arbeitsrichtwerte

Gewindefräser und Mikro-Gewindefräser

ISO		Werkstoffgruppe	Härte	Materialbeispiel	Werkstoff-Nr.	Schnittgeschw. v_c (m/min)
P	P1	Bau/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	< 800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	**90**
	P2	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800-1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	**80**
	P3	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800-1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	**70**
M	M1	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	< 1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	**55**
	M2	Rost und säurebeständige Stähle, martensitisch	< 1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	**50**
	M3	Duplex und Super Duplex	< 1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWn25-7-4	1.4462 1.441 1.4501	**45**
K	K1	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.603	**120**
	K2	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.704 0.706 0.707	**100**
	K3	ADI, GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		**80**
N	N1	Aluminium, Aluminium-Knetlegierung	< 450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.025 3.2315 3.4335	**250**
	N2	Aluminium- Gusslegierungen	< 600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	**230**
	N3	Magnesium-Legierungen	< 500 N/mm²	GDMgAl8Zn1	3.5812.08	**180**
	N4	Kuper und Kupferlegierungen	langspanend kurzspanend	CuZn20 CuZn37Pb0,5 CuZn39Pb2 CuZn43Pb2	2.025 2.0332 2.038 2.041	**130**
	N5	Kupfer-Sonderlegierungen	< 1400 N/mm²	Ampco		**160**
	N6	Kunstoffe [Thermoplaste, Duroplaste]	langspanend kurzspanend	PMMA, POM,PVC Pertinax		**300**
S	S1	Titan und Titanlegierungen	< 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.7025 3.7115 3.7165	**40**
	S2	Nickel-, Kobalt- und Eisen-Legierungen	< 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic	2.461 2.4668 2.4634	**30**
H	H1 H2	Hochfeste Stähle, gehärtete Stähle	45-55 HRC 55-62 HRC	Hardox PM30		**45** **40**

Bitte beachten:
Die in den jeweiligen Spalten angegebenen Schnittwerte sind Richtwerte, diese müssen je nach Einsatzbedingungen (Material, Schmierung, Werkzeugspannung, Maschine, usw.) angepasst werden.
Je nach Einsatzfall können die optimalen Schnittwerte um bis zu ±30 % der Tabelle abweichen!

Frästeildurchmesser [d_1] / Vorschub pro Zahn [f_z] [Gegenlauf]														
Ø1	Ø2	Ø3	Ø4	Ø5	Ø6	Ø7	Ø8	Ø9	Ø10	Ø12	Ø14	Ø16	Ø18	Ø20
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,01	0,02	0,02	0,025	0,03	0,035	0,045	0,05	0,055	0,06	0,06	0,065	0,065	0,07	0,08
0,01	0,02	0,02	0,025	0,03	0,035	0,045	0,05	0,055	0,06	0,06	0,065	0,065	0,07	0,08
0,01	0,02	0,02	0,025	0,03	0,035	0,045	0,05	0,055	0,06	0,06	0,065	0,065	0,07	0,08
0,01	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,05	0,055	0,06	0,065	0,065	0,07	0,075
0,01	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,05	0,055	0,06	0,065	0,065	0,07	0,075
0,01	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,05	0,055	0,06	0,065	0,065	0,07	0,075
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,06	0,065	0,07	0,08	0,09	0,1	0,12
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,06	0,065	0,07	0,08	0,09	0,1	0,12
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,06	0,065	0,07	0,08	0,09	0,1	0,12
0,02	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,08	0,085	0,09	0,1	0,12
0,02	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,08	0,085	0,09	0,1	0,12
0,02	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,08	0,085	0,09	0,1	0,12
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	0,08	0,09
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,06	0,065	0,07	0,075	0,08
0,02	0,03	0,04	0,045	0,05	0,055	0,06	0,07	0,08	0,09	0,09	0,1	0,12	0,13	0,15
0,01	0,01	0,015	0,02	0,025	0,03	0,035	0,04	0,04	0,045	0,05	0,055	0,06	0,065	0,07
0,01	0,01	0,015	0,02	0,025	0,03	0,035	0,04	0,04	0,045	0,05	0,055	0,06	0,065	0,07
x 0,01	0,01	0,015	0,02	0,025	0,03	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07
x 0,01	0,01	0,015	0,02	0,025	0,03	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07

TM	TMU	TM SP	TM SP H
53830 53831 53860	53832 73830	53840 53841	53850
			
●●	●●	●●	○
●●	●●	●●	○
●	●●	●●	●
●	●●	●●	○
●	●●	●●	○
●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	●
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	○
●●	●●	●●	●●
●	●	●●	●●
○	○	○	●●

Allgemeine Empfehlung:

1.) Ab 2,5xD Gewindetiefe sollte im Gewinde Ø in 2 Durchgängen programmiert werden. [2/3-1/3 im Gegenlauf]

2.) Allgemein im VA und in der Hartbearbeitung ab >HRC40 ist zu empfehlen das wir im Gewinde Ø in 2 Durchgängen programmieren. [2/3-1/3 im Gegenlauf]

●● optimal geeignet

● gut geeignet

○ nicht geeignet

Arbeitsrichtwerte

MTM-NX 2,5xD (Bitte beachten, Linkslauf M4)

ISO		Werkstoffgruppe	Härte	Materialbeispiel	Werkstoff-Nr.	Schnittgeschw. v_c (m/min)
P	P1	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	< 800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	100
	P2	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800-1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	90
	P3	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800-1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	80
M	M1	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	< 1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	65
	M2	Rost- und säurebeständige Stähle, martensitisch	< 1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	60
	M3	Duplex und Super Duplex	< 1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWn25-7-4	1.4462 1.441 1.4501	55
K	K1	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.603	140
	K2	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.704 0.706 0.707	120
	K3	ADI, GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		100
N	N1	Aluminium, Aluminium-Knetlegierung	< 450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.025 3.2315 3.4335	280
	N2	Aluminium-Gusslegierungen	< 600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	250
	N3	Magnesium-Legierungen	< 500 N/mm²	GDMgAl8Zn1	3.5812.08	200
	N4	Kupfer und Kupferlegierungen	langspanend kurzspanend	CuZn20 CuZn37Pb0,5 CuZn39Pb2 CuZn43Pb2	2.025 2.0332 2.038 2.041	140
	N5	Kupfer-Sonderlegierungen	< 1400 N/mm²	Ampco		130
	N6	Kunststoffe [Thermoplaste, Duroplaste]	langspanend kurzspanend	PMMA, POM,PVC Pertinax		300
S	S1	Titan und Titan-Legierungen	< 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.7025 3.7115 3.7165	55
	S2	Nickel-, Kobalt- und Eisen-Legierungen	< 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic	2.461 2.4668 2.4634	40
H	H1 H2	Hochfeste Stähle, gehärtete Stähle	45-55 HRC 55-66 HRC	Hardox PM30		50 x

Bitte beachten:
Die in den jeweiligen Spalten angegebenen Schnittwerte sind Richtwerte, diese müssen je nach Einsatzbedingungen (Material, Schmierung, Werkzeugspannung, Maschine, usw.) angepasst werden.
Je nach Einsatzfall können die optimalen Schnittwerte um bis zu ±30 % der Tabelle abweichen!

Frästeildurchmesser [d1] / Vorschub pro Zahn [f_z] [Gleichlauf]													MTM-NX 53892 
Ø1 mm	Ø2 mm	Ø3 mm	Ø4 mm	Ø5 mm	Ø6 mm	Ø7 mm	Ø8 mm	Ø9 mm	Ø10 mm	Ø12 mm	Ø14 mm	Ø16 mm	
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,008	0,015	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,055	●●
0,008	0,015	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,055	●●
0,008	0,015	0,02	0,025	0,03	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,055	●●
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,01	0,02	0,02	0,025	0,03	0,03	0,035	0,035	0,04	0,045	0,05	0,055	0,06	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,01	0,02	0,025	0,03	0,035	0,04	0,045	0,05	0,055	0,06	0,065	0,07	0,075	●●
0,005	0,007	0,012	0,015	0,02	0,025	0,03	0,035	0,035	0,04	0,045	0,045	0,05	●●
0,005	0,007	0,012	0,015	0,02	0,025	0,03	0,035	0,035	0,04	0,045	0,045	0,05	●●
0,005 x	0,008 x	0,01 x	0,012 x	0,015 x	0,02 x	0,025 x	0,025 x	0,03 x	0,03 x	0,035 x	0,04 x	0,045 x	●● ○

●● optimal geeignet
● gut geeignet
○ nicht geeignet

Arbeitsrichtwerte

TMC-NX 2xD IK

ISO		Werkstoffgruppe	Härte	Materialbeispiel	Werkstoff-Nr.	Schnittgeschw. v_c (m/min)
P	P1	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	< 800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	100
	P2	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800-1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	90
	P3	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800-1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	80
M	M1	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	< 1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	60
	M2	Rost- und säurebeständige Stähle, martensitisch	< 1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	55
	M3	Duplex und Super Duplex	< 1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWn25-7-4	1.4462 1.441 1.4501	50
K	K1	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.603	120
	K2	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.704 0.706 0.707	100
	K3	ADI, GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		90
N	N1	Aluminium, Aluminium-Knetlegierung	< 450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.025 3.2315 3.4335	x
	N2	Aluminium-Gusslegierungen	< 600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	x
	N3	Magnesium-Legierungen	< 500 N/mm²	GDMgAl8Zn1	3.5812.08	x
	N4	Kupfer und Kupferlegierungen	langspanend kurzspanend	CuZn20 CuZn37Pb0,5 CuZn39Pb2 CuZn43Pb2	2.025 2.0332 2.038 2.041	90
	N5	Kupfer-Sonderlegierungen	< 1400 N/mm²	Ampco		70
	N6	Kunststoffe［Thermoplaste, Duroplaste］	langspanend kurzspanend	PMMA, POM,PVC Pertinax		x
S	S1	Titan und Titan-Legierungen	< 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.7025 3.7115 3.7165	55
	S2	Nickel-, Kobalt- und Eisen-Legierungen	< 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic	2.461 2.4668 2.4634	45
H	H1 H2	Hochfeste Stähle, gehärtete Stähle	45-55 HRC 55-66 HRC	Hardox PM30		x x

Bitte beachten:
Die in den jeweiligen Spalten angegebenen Schnittwerte sind Richtwerte, diese müssen je nach Einsatzbedingungen (Material, Schmierung, Werkzeugspannung, Maschine, usw.) angepasst werden.
Je nach Einsatzfall können die optimalen Schnittwerte um bis zu ±30 % der Tabelle abweichen!

TMC-NX 53890 										
Frästeildurchmesser [d1] / Vorschub pro Zahn [f_z] [Gegenlauf]										
Ø2	**Ø3**	**Ø4**	**Ø5**	**Ø6**	**Ø7**	**Ø8**	**Ø9**	**Ø10**	**Ø12**	**Ø14**
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
0,01	0,015	0,02	0,02	0,025	0,025	0,025	0,03	0,03	0,035	0,04	●●
0,01	0,015	0,02	0,02	0,025	0,025	0,025	0,03	0,03	0,035	0,04	●●
0,01	0,015	0,02	0,02	0,025	0,025	0,025	0,03	0,03	0,035	0,04	●●
0,005	0,01	0,015	0,015	0,02	0,02	0,02	0,025	0,025	0,03	0,03	●●
0,005	0,01	0,015	0,015	0,02	0,02	0,02	0,025	0,025	0,03	0,03	●●
0,005	0,01	0,015	0,015	0,02	0,02	0,02	0,025	0,025	0,03	0,03	●●
0,01	0,02	0,025	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,06	●●
0,01	0,02	0,025	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,06	●●
0,01	0,02	0,025	0,03	0,03	0,035	0,04	0,04	0,045	0,05	0,06	●●
x	x	x	x	x	x	x	x	x	x	x	○
x	x	x	x	x	x	x	x	x	x	x	○
x	x	x	x	x	x	x	x	x	x	x	○
0,01	0,015	0,02	0,02	0,025	0,025	0,025	0,03	0,03	0,035	0,04	●●
0,005	0,01	0,015	0,015	0,02	0,02	0,02	0,025	0,025	0,03	0,035	●●
x	x	x	x	x	x	x	x	x	x	x	○
0,01	0,015	0,015	0,02	0,025	0,025	0,025	0,03	0,03	0,035	0,035	●●
0,005	0,01	0,01	0,015	0,02	0,02	0,02	0,025	0,025	0,03	0,03	●
x x	x x	x x	x x	x x	x x	x x	x x	x x	x x	x x	○ ○

●● optimal geeignet
● gut geeignet
○ nicht geeignet

Arbeitsrichtwerte

TMD-NX 2,5xD (Bitte beachten, Linkslauf M4)

ISO		Werkstoffgruppe	Härte	Materialbeispiel	Werkstoff-Nr.	Schnittgeschw. v_c (m/min)
P	P1	Bau-/Automatenstähle, unlegierte Vergütungs-/ Einsatzstähle	< 800 N/mm²	S235JR C15 11SMnPb30	1.0037 1.0401 1.0718	80
	P2	Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	800-1000 N/mm²	S355J2 C60 31CrMo12	1.0577 1.0601 1.8515	70
	P3	Legierte Vergütungsstähle, Werkzeugstähle, Schnellarbeitsstähle	800-1200 N/mm²	42CrMo4 36CrNiMo4 X36CrMo17 HS 6-5-2	1.7225 1.6511 1.2316 1.3343	70
M	M1	Nichtrostende Stahlwerkstoffe, geschwefelt, austenitisch	< 1000 N/mm²	X5CrNi18-10 X6CrNiTi18-10 X8CrNiS18-9	1.4301 1.4571 1.4305	55
	M2	Rost- und säurebeständige Stähle, martensitisch	< 1000 N/mm²	X17CrNi16-2 X90CrMoV18 X2CrTi12	1.4057 1.4112 1.4512	50
	M3	Duplex und Super Duplex	< 1300 N/mm²	X2CrNiMoN22-5-3 X2CrNiMoN25-7-4 X2CrNiMoCuWn25-7-4	1.4462 1.441 1.4501	50
K	K1	Gusseisen	300 HB	EN-GJL-150 EN-GJL-250 EN-GJL-300	0.6015 0.6025 0.603	80
	K2	Kugelgraphit- und Temperguss	350 HB	EN-GJS-400-15 EN-GJS-600-3 EN-GJS-700-2	0.704 0.706 0.707	75
	K3	ADI, GGV	1000 N/mm² 350 HB	EN-GJS1000-5 EN-GJV250 EN-GJV400		65
N	N1	Aluminium, Aluminium-Knetlegierung	< 450 N/mm²	Al99,5H AlMgSi1 AlZn4,5Mg	3.025 3.2315 3.4335	x
	N2	Aluminium-Gusslegierungen	< 600 N/mm²	GD-AlSi5Cu1Mg GD-AlSi8Cu3 G-AlSi9Mg G-AlSi12	3.2134 3.2162 3.2373 3.2581	120
	N3	Magnesium-Legierungen	< 500 N/mm²	GDMgAl8Zn1	3.5812.08	x
	N4	Kupfer und Kupferlegierungen	langspanend kurzspanend	CuZn20 CuZn37Pb0,5 CuZn39Pb2 CuZn43Pb2	2.025 2.0332 2.038 2.041	80
	N5	Kupfer-Sonderlegierungen	< 1400 N/mm²	Ampco		65
	N6	Kunststoffe［Thermoplaste, Duroplaste］	langspanend kurzspanend	PMMA, POM,PVC Pertinax		x
S	S1	Titan und Titan-Legierungen	< 1200 N/mm²	Titan TiAl5Sn2 TiAl6V4	3.7025 3.7115 3.7165	45
	S2	Nickel-, Kobalt- und Eisen-Legierungen	< 1400 N/mm²	Hastelloy C4 Inconel 718 Nimonic	2.461 2.4668 2.4634	45
H	H1 H2	Hochfeste Stähle, gehärtete Stähle	45-55 HRC 55-66 HRC	Hardox PM30		40 30

Bitte beachten:
Die in den jeweiligen Spalten angegebenen Schnittwerte sind Richtwerte, diese müssen je nach Einsatzbedingungen (Material, Schmierung, Werkzeugspannung, Maschine, usw.) angepasst werden.
Je nach Einsatzfall können die optimalen Schnittwerte um bis zu ±30 % der Tabelle abweichen!

TMD-NX 53948 53949 53950 											
Frästeildurchmesser [d1] / Vorschub pro Zahn [f_z]											
Ø1-1,8		**Ø1,81-2,4**	**Ø2,41-2,7**	**Ø2,71-3,1**	**Ø3,11-3,8**	**Ø3,81-4,6**	**Ø4,61-6,2**	**Ø6,21-7,5**	**Ø7,51-9,0**	**Ø9,01-16**	
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
0,008	0,008	0,012	0,014	0,018	0,026	0,028	0,030	0,035	0,040	0,048	●●
0,008	0,008	0,012	0,014	0,018	0,026	0,028	0,030	0,035	0,040	0,048	●●
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,044	●●
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,044	●●
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,044	●●
0,005	0,005	0,007	0,008	0,010	0,014	0,016	0,018	0,020	0,026	0,033	●●
0,008	0,008	0,012	0,014	0,016	0,020	0,024	0,030	0,036	0,040	0,048	●●
0,008	0,008	0,012	0,014	0,016	0,020	0,024	0,030	0,036	0,040	0,048	●●
0,007	0,007	0,011	0,013	0,015	0,018	0,022	0,028	0,033	0,038	0,046	●●
x	x	x	x	x	x	x	x	x	x	x	●
0,007	0,007	0,011	0,013	0,015	0,018	0,022	0,028	0,033	0,038	0,046	●
x	x	x	x	x	x	x	x	x	x	x	●
0,008	0,008	0,012	0,014	0,016	0,020	0,024	0,030	0,036	0,040	0,048	●●
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,048	●●
x	x	x	x	x	x	x	x	x	x	x	○
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,044	●●
0,007	0,007	0,010	0,011	0,012	0,016	0,020	0,025	0,030	0,036	0,044	●●
0,007 0,005	0,007 0,005	0,010 0,008	0,011 0,009	0,012 0,010	0,016 0,014	0,020 0,018	0,025 0,022	0,030 0,028	0,036 0,033	0,044 0,042	●● ●●

●● optimal geeignet
● gut geeignet
○ nicht geeignet

Kernlochdurchmesser
Gewindeschneiden

Metrische ISO-Regelgewinde DIN 13

Nenn-Ø	Steigung P mm	Kernloch-(Bohr-)Ø DIN 336 mm	Kern-Ø Muttergewinde 6H* min. mm	Kern-Ø Muttergewinde 6H* max. mm
M 1	0,25	**0,75**	0,729	0,785
M 1,1	0,25	**0,85**	0,829	0,885
M 1,2	0,25	**0,95**	0,929	0,985
M 1,4	0,30	**1,10**	1,075	1,142
M 1,6	0,35	**1,25**	1,221	1,321
M 1,8	0,35	**1,45**	1,421	1,521
M 2	0,40	**1,60**	1,567	1,679
M 2,2	0,45	**1,75**	1,713	1,838
M 2,5	0,45	**2,05**	2,013	2,138
M 3	0,50	**2,50**	2,459	2,599
M 3,5	0,60	**2,90**	2,850	3,010
M 4	0,70	**3,30**	3,242	3,422
M 4,5	0,75	**3,70**	3,688	3,878
M 5	0,80	**4,20**	4,134	4,334
M 6	1,00	**5,00**	4,917	5,153
M 7	1,00	**6,00**	5,917	6,153
M 8	1,25	**6,80**	6,647	6,912
M 9	1,25	**7,80**	7,647	7,912
M 10	1,50	**8,50**	8,376	8,676
M 11	1,50	**9,50**	9,376	9,676
M 12	1,75	**10,20**	10,106	10,441
M 14	2,00	**12,00**	11,835	12,210
M 16	2,00	**14,00**	13,835	14,210
M 18	2,50	**15,50**	15,294	15,744
M 20	2,50	**17,50**	17,294	17,744
M 22	2,50	**19,50**	19,294	19,744
M 24	3,00	**21,00**	20,752	21,252
M 27	3,00	**24,00**	23,752	24,252
M 30	3,50	**26,50**	26,211	26,771
M 33	3,50	**29,50**	29,211	29,771
M 36	4,00	**32,00**	31,670	32,270
M 39	4,00	**35,00**	34,670	35,270
M 42	4,50	**37,50**	37,129	37,799
M 45	4,50	**40,50**	40,129	40,799
M 48	5,00	**43,00**	42,587	43,297
M 52	5,00	**47,00**	46,587	47,297
M 56	5,50	**50,50**	50,046	50,796

* M 1,1 bis M 1,4 Kern-Ø Muttergewinde 5H

Metrische ISO-Feingewinde DIN 13

Nenn-Ø x Steigung P mm	Kernloch-(Bohr-)Ø DIN 336 mm	Kern-Ø Muttergewinde 6H* min. mm	Kern-Ø Muttergewinde 6H* max. mm
M 2,5 x 0,35	**2,15**	2,121	2,221
M 3,0 x 0,35	**2,65**	2,621	2,721
M 3,5 x 0,35	**3,15**	3,121	3,221
M 4,0 x 0,50	**3,50**	3,459	3,599
M 4,5 x 0,50	**4,00**	3,959	4,099
M 5,0 x 0,50	**4,50**	4,459	4,599
M 5,5 x 0,50	**5,00**	4,959	5,099
M 6,0 x 0,75	**5,20**	5,188	5,378
M 7,0 x 0,75	**6,20**	6,188	6,378
M 8,0 x 0,50	**7,50**	7,459	7,599
M 8,0 x 0,75	**7,20**	7,188	7,378
M 8,0 x 1,00	**7,00**	6,917	7,153
M 9,0 x 0,75	**8,20**	8,188	8,378
M 9,0 x 1,00	**8,00**	7,917	8,153
M 10 x 0,75	**9,20**	9,188	9,378
M 10 x 1,00	**9,00**	8,917	9,153
M 10 x 1,25	**8,80**	8,647	8,912
M 11 x 0,75	**10,20**	10,188	10,378
M 11 x 1,00	**10,00**	9,917	10,153
M 12 x 1,00	**11,00**	10,917	11,153
M 12 x 1,25	**10,80**	10,647	10,912
M 12 x 1,50	**10,50**	10,376	10,676
M 14 x 1,00	**13,00**	12,917	13,153
M 14 x 1,25	**12,80**	12,647	12,912
M 14 x 1,50	**12,50**	12,376	12,676
M 15 x 1,00	**14,00**	13,917	14,153
M 15 x 1,50	**13,50**	13,376	13,676
M 16 x 1,00	**15,00**	14,917	15,153
M 16 x 1,25	**14,80**	14,647	14,912
M 16 x 1,50	**14,50**	14,376	14,676
M 17 x 1,00	**16,00**	15,917	16,153
M 17 x 1,50	**15,50**	15,376	15,676
M 18 x 1,00	**17,00**	16,917	17,153
M 18 x 1,50	**16,50**	16,376	16,676
M 20 x 1,00	**19,00**	18,917	19,153
M 20 x 1,50	**18,50**	18,376	18,676
M 20 x 2,00	**18,00**	17,835	18,210
M 22 x 1,00	**21,00**	20,917	21,153
M 22 x 1,50	**20,50**	20,376	20,676
M 22 x 2,00	**20,00**	19,835	20,210
M 24 x 1,00	**23,00**	22,917	23,153
M 24 x 1,50	**22,50**	22,376	22,676
M 24 x 2,00	**22,00**	21,835	22,210
M 25 x 1,00	**24,00**	23,917	24,153
M 25 x 1,50	**23,50**	23,376	23,676
M 25 x 2,00	**23,00**	22,835	23,210
M 27 x 1,00	**26,00**	25,917	26,153
M 27 x 1,50	**25,50**	25,376	25,676
M 27 x 2,00	**25,00**	24,835	25,210
M 28 x 1,00	**27,00**	26,917	27,153
M 28 x 1,50	**26,50**	26,376	26,676
M 28 x 2,00	**26,00**	25,835	26,210
M 30 x 1,00	**29,00**	28,917	29,153
M 30 x 1,50	**28,50**	28,376	28,676
M 30 x 2,00	**28,00**	27,835	28,210
M 30 x 3,00	**27,00**	26,752	27,252
M 32 x 1,50	**30,50**	30,376	30,676
M 32 x 2,00	**30,00**	29,835	30,210
M 33 x 1,50	**31,50**	31,376	31,676
M 33 x 2,00	**31,00**	30,835	31,210
M 33 x 3,00	**30,00**	29,752	30,252
M 35 x 1,50	**33,50**	33,376	33,676
M 36 x 1,50	**34,50**	34,376	34,676

UNC-Gewinde ASME B1.1

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø DIN 336 mm	Kern-Ø Muttergewinde 2B min. mm	Kern-Ø Muttergewinde 2B max. mm
Nr. 1	64	**1,55**	1,425	1,580
Nr. 2	56	**1,85**	1,694	1,872
Nr. 3	48	**2,10**	1,941	2,146
Nr. 4	40	**2,35**	2,157	2,385
Nr. 5	40	**2,65**	2,487	2,698
Nr. 6	32	**2,85**	2,642	2,896
Nr. 8	32	**3,50**	3,302	3,531
Nr. 10	24	**3,90**	3,683	3,937
Nr. 12	24	**4,50**	4,343	4,597
1/4	20	**5,10**	4,978	5,258
5/16	18	**6,60**	6,401	6,731
3/8	16	**8,00**	7,798	8,153
7/16	14	**9,40**	9,144	9,550
1/2	13	**10,80**	10,592	11,024
9/16	12	**12,20**	11,989	12,446
5/8	11	**13,50**	13,386	13,868
3/4	10	**16,50**	16,307	16,840
7/8	9	**19,50**	19,177	19,761
1	8	**22,25**	21,971	22,606
1 1/8	7	**25,00**	24,638	25,349
1 1/4	7	**28,00**	27,813	28,524
1 3/8	6	**30,75**	30,353	31,115
1 1/2	6	**34,00**	33,528	34,290
1 3/4	5	**39,50**	38,938	39,802
2	4,5	**45,00**	44,679	45,593

Die jeweils passenden Spiralbohrer finden Sie unter anderem in unserem Gesamtkatalog oder auch unter www.stock.de.

MJ-Gewinde DIN ISO 5855

Nenn-Ø x Steigung P mm	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde 5H* min. mm	Kern-Ø Muttergewinde 5H* max. mm
MJ 3 x 0,50	**2,60**	2,513	2,653
MJ 4 x 0,70	**3,40**	3,318	3,498
MJ 5 x 0,80	**4,30**	4,221	4,421
MJ 6 x 0,50	**5,55**	5,513	5,625
MJ 6 x 0,75	**5,35**	5,269	5,419
MJ 6 x 1,00	**5,10**	5,026	5,216
MJ 8 x 0,50	**7,55**	7,513	7,625
MJ 8 x 0,75	**7,35**	7,269	7,419
MJ 8 x 1,00	**7,10**	7,026	7,216
MJ 8 x 1,25	**6,90**	6,782	6,994
MJ 10 x 1,00	**9,10**	9,026	9,216
MJ 10 x 1,25	**8,90**	8,782	8,994
MJ 10 x 1,50	**8,60**	8,539	8,775
MJ 12 x 1,75	**10,40**	10,295	10,560
MJ 16 x 2,00	**14,20**	14,051	14,351

* MJ 3 x 0,50 bis MJ 5 x 0,80 Kern-Ø Muttergewinde 6H

UNJC-Gewinde ISO 3161

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde 3B min. mm	Kern-Ø Muttergewinde 3B max. mm
Nr. 6	32	**2,85**	2,733	2,939
Nr. 8	32	**3,55**	3,393	3,599
Nr. 10	24	**4,00**	3,795	4,064
Nr. 12	24	**4,60**	4,455	4,704
1/4	20	**5,30**	5,113	5,387
5/16	18	**6,75**	6,563	6,833
3/8	16	**8,20**	7,978	8,255
7/16	14	**9,60**	9,346	9,639
1/2	13	**11,00**	10,798	11,095
9/16	12	**12,40**	12,228	12,482
5/8	11	**13,80**	13,627	13,904

UNJF-Gewinde ISO 3161

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde 3B min. mm	Kern-Ø Muttergewinde 3B max. mm
Nr. 6	40	**3,00**	2,888	3,053
Nr. 8	36	**3,60**	3,480	3,663
Nr. 10	32	**4,20**	4,054	4,255
Nr. 12	28	**4,75**	4,602	4,816
1/4	28	**5,60**	5,466	5,662
5/16	24	**7,00**	6,906	7,109
3/8	24	**8,60**	8,494	8,679
7/16	20	**10,00**	9,876	10,084
1/2	20	**11,60**	11,463	11,661
9/16	18	**13,00**	12,913	13,122
5/8	18	**14,60**	14,501	14,702

UNF-Gewinde ASME B1.1

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø DIN 336 mm	Kern-Ø Muttergewinde 2B min. mm	Kern-Ø Muttergewinde 2B max. mm
Nr. 1	72	**1,55**	1,473	1,610
Nr. 2	64	**1,85**	1,755	1,910
Nr. 3	56	**2,15**	2,024	2,197
Nr. 4	48	**2,40**	2,271	2,459
Nr. 5	44	**2,70**	2,550	2,741
Nr. 6	40	**2,95**	2,819	3,023
Nr. 8	36	**3,50**	3,404	3,607
Nr. 10	32	**4,10**	3,962	4,166
Nr. 12	28	**4,60**	4,496	4,724
1/4	28	**5,50**	5,359	5,588
5/16	24	**6,90**	6,782	7,036
3/8	24	**8,50**	8,382	8,636
7/16	20	**9,90**	9,728	10,033
1/2	20	**11,50**	11,328	11,608
9/16	18	**12,90**	12,751	13,081
5/8	18	**14,50**	14,351	14,681
3/4	16	**17,50**	17,323	17,678
7/8	14	**20,40**	20,269	20,650
1	12	**23,25**	23,114	23,571
1 1/8	12	**26,50**	26,289	26,746
1 1/4	12	**29,50**	29,464	29,921
1 3/8	12	**32,75**	32,639	33,096
1 1/2	12	**36,00**	35,814	36,271

BSW-(Whitworth)-Gewinde BS84

Nenn-Ø inch	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
W 1/16	60	**1,20**	1,045	1,230
W 3/32	48	**1,80**	1,704	1,912
W 1/8	40	**2,50**	2,362	2,591
W 5/32	32	**3,20**	2,952	3,214
W 3/16	24	**3,60**	3,407	3,745
W 7/32	24	**4,50**	4,201	4,539
W 1/4	20	**5,10**	4,724	5,156
W 5/16	18	**6,50**	6,130	6,590
W 3/8	16	**7,90**	7,492	7,987
W 7/16	14	**9,20**	8,789	9,330
W 1/2	12	**10,50**	9,989	10,591
W 9/16	12	**12,00**	11,577	12,179
W 5/8	11	**13,50**	12,918	13,558
W 3/4	10	**16,25**	15,797	16,483
W 7/8	9	**19,25**	18,611	19,353
W 1	8	**22,00**	21,334	22,147
W 1 1/8	7	**24,50**	23,928	24,832
W 1 1/4	7	**27,75**	27,103	28,007
W 1 3/8	6	**30,50**	29,504	30,528
W 1 1/2	6	**33,50**	32,679	33,703
W 1 5/8	5	**35,50**	34,769	35,963
W 1 3/4	5	**39,00**	37,944	39,138
W 2	4,5	**44,50**	43,571	44,877

(Whitworth-) Rohrgewinde (nach DIN-ISO 228-1)

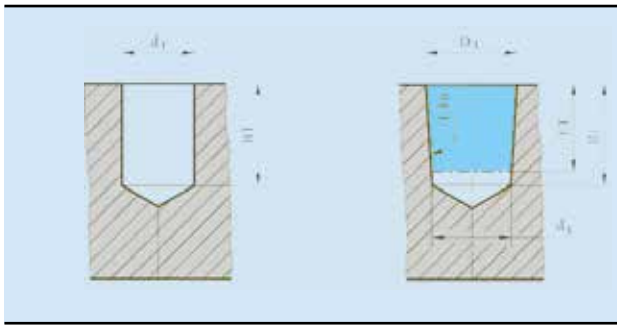
Nenn-Ø inch	Gang pro inch	Kernloch-(Bohr-)Ø DIN 336 mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
G 1/16	28	**6,80**	6,561	6,843
G 1/8	28	**8,80**	8,566	8,848
G 1/4	19	**11,80**	11,445	11,890
G 3/8	19	**15,25**	14,950	15,395
G 1/2	14	**19,00**	18,631	19,172
G 5/8	14	**21,00**	20,587	21,128
G 3/4	14	**24,50**	24,117	24,658
G 7/8	14	**28,25**	27,877	28,418
G 1	11	**30,75**	30,291	30,931
G 1 1/8	11	**35,50**	34,939	35,579
G 1 1/4	11	**39,50**	38,952	39,592
G 1 1/2	11	**45,25**	44,845	45,485
G 1 3/4	11	**51,00**	50,788	51,428
G 2	11	**57,00**	56,656	57,296

Stahlpanzerrohr-Gewinde nach DIN 40430

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
Pg 7	20	**11,40**	11,280	11,430
Pg 9	18	**14,00**	13,860	14,010
Pg 11	18	**17,30**	17,260	17,410
Pg 13,5	18	**19,00**	19,060	19,210
Pg 16	18	**21,30**	21,160	21,310
Pg 21	16	**26,90**	26,780	27,030
Pg 29	16	**35,50**	35,480	35,730
Pg 36	16	**45,50**	45,480	45,730
Pg 42	16	**52,50**	52,480	52,730
Pg 48	16	**57,80**	57,780	58,030

NPT ANSI B 2.1
Amerik. kegeliges Rohrgewinde Kegel 1:16

Ausführung A (möglichst vermeiden) | Ausführung B



Nenn-Ø	Gang pro inch	Kernloch-Ø zylindr. (A) d_1	Kernloch-Ø konisch (B) D_1	Einschneidtiefe ET mm	Bohrtiefe BT (min) mm
1/16	27	**6,15**	6,39	9,29	10,7
1/8	27	**8,40**	8,74	9,32	10,8
1/4	18	**11,10**	11,36	13,52	15,6
3/8	18	**14,30**	14,80	13,83	16,0
1/2	14	**17,90**	18,32	18,07	20,8
3/4	14	**23,30**	23,67	18,55	21,3
1	11,5	**29,00**	29,69	22,29	25,6
1 1/4	11,5	**37,70**	38,45	22,80	26,1
1 1/2	11,5	**43,70**	44,52	22,80	26,1
2	11,5	**55,60**	56,56	23,20	26,5
2 1/2	8	**66,30**	67,62	31,75	36,3
3	8	**82,30**	83,52	33,74	38,5

EG-Gewinde Metr./Metr. Fein (EG M 14 x 1,25) für Gewindedrahteinsätze DIN 8140

Nenn-Ø	x Steigung P mm	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
EG M 4	0,70	**4,20**	4,152	4,292
EG M 5	0,80	**5,25**	5,174	5,334
EG M 6	1,00	**6,30**	6,217	6,407
EG M 8	1,25	**8,40**	8,271	8,483
EG M10	1,50	**10,50**	10,324	10,560
EG M12	1,75	**12,50**	12,379	12,644
EG M14 x	1,25	**14,40**	14,271	14,483
EG M16	2,00	**16,50**	16,433	16,733

EG UNC (UNC-STI) Gewinde für Gewindedrahteinsätze ASME B18.29.1

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
EG Nr. 6	32	**3,80**	3,678	3,879
EG Nr. 8	32	**4,40**	4,338	4,524
EG Nr. 10	24	**5,20**	5,055	5,283
EG Nr. 12	24	**5,80**	5,715	5,944
EG 1/4	20	**6,70**	6,624	6,868
EG 5/16	18	**8,40**	8,242	8,489
EG 3/8	16	**10,00**	9,868	10,127
EG 7/16	14	**11,60**	11,506	11,783
EG 1/2	13	**13,30**	13,122	13,393
EG 9/16	12	**14,90**	14,747	15,032
EG 5/8	11	**16,50**	16,375	16,673

EG UNF (UNF-STI) Gewinde für Gewindedrahteinsätze ASME B18.29.1

Nenn-Ø	Gang pro inch	Kernloch-(Bohr-)Ø mm	Kern-Ø Muttergewinde min. mm	Kern-Ø Muttergewinde max. mm
EG Nr. 6	40	**3,70**	3,644	3,818
EG Nr. 8	36	**4,40**	4,321	4,498
EG Nr. 10	32	**5,10**	4,999	5,184
EG Nr. 12	28	**5,70**	5,682	5,809
EG 1/4	28	**6,60**	6,546	6,721
EG 5/16	24	**8,25**	8,166	8,352
EG 3/8	24	**9,80**	9,754	9,931
EG 7/16	20	**11,50**	11,389	11,585
EG 1/2	20	**13,10**	12,974	13,172
EG 9/16	18	**14,70**	14,592	14,798
EG 5/8	18	**16,25**	16,180	16,386

Empfohlene Bohrdurchmesser

Gewindeformen

Metrische ISO-Gewinde DIN 13

Nenn-Ø	Steigung P	Bohr-Ø	Bohr-Ø		Kern-Ø Muttergewinde 7H*	
mm		mm	min. mm	max. mm	min. mm	max. mm
M1	0,25	**0,90**	0,89	0,92	0,729	0,819
M1,2	0,25	**1,10**	1,09	1,12	0,929	1,019
M1,4	0,30	**1,28**	1,27	1,30	1,075	1,181
M1,6	0,35	**1,46**	1,45	1,48	1,221	1,346
M1,7	0,35	**1,56**	1,55	1,58	1,321	1,446
M1,8	0,35	**1,66**	1,65	1,68	1,421	1,546
M 2	0,40	**1,85**	1,84	1,88	1,567	1,679
M 2,2	0,45	**2,00**	2,01	2,05	1,713	1,838
M 2,5	0,45	**2,30**	2,28	2,32	2,013	2,138
M 3	0,50	**2,80**	2,78	2,85	2,459	2,639
M 3,5	0,60	**3,25**	3,23	3,30	2,850	3,050
M 4	0,70	**3,70**	3,68	3,76	3,242	3,466
M 4,5	0,75	**4,20**				
M 5	0,80	**4,65**	4,62	4,71	4,134	4,384
M 6	1,00	**5,55**	5,52	5,62	4,917	5,217
M 7	1,00	**6,55**	6,52	6,62	5,917	6,217
M 8	1,25	**7,40**	7,36	7,47	6,647	6,982
M 9	1,25	**8,40**	8,36	8,47	7,647	7,982
M 10	1,50	**9,30**	9,26	9,38	8,376	8,751
M 11	1,50	**10,30**	10,26	10,38	9,376	9,751
M 12	1,75	**11,20**	11,15	11,29	10,106	10,531
M 14	2,00	**13,10**	13,05	13,20	11,835	12,310
M 16	2,00	**15,10**	15,05	15,20	13,835	14,310
M 18	2,50	**16,90**	16,83	17,02	15,294	15,854
M 20	2,50	**18,90**	18,83	19,02	17,294	17,854
M 22	2,50	**20,90**	20,83	21,02	19,294	19,854
M 24	3,00	**22,70**	22,62	22,80	20,752	21,382
M 27	3,00	**25,70**	25,62	25,80	23,752	24,382
M 30	3,50	**28,50**	28,40	28,60	26,211	26,921
M 33	3,50	**31,50**	31,40	31,60	29,211	29,921
M 36	4,00	**34,30**	34,17	34,40	31,670	32,420
M 39	4,00	**37,30**	37,17	37,40	34,670	35,420
M 42	4,50	**40,10**	39,95	40,20	37,129	37,979

* M 2 bis M 2,5 Kern-Ø Muttergewinde 6H

Metrische ISO-Feingewinde DIN 13

Nenn-x-Ø	Steigung P	Bohr-Ø	Bohr-Ø		Kern-Ø Muttergewinde 7H*	
mm		mm	min. mm	max. mm	min. mm	max. mm
M 2,5 x	0,35	**2,35**	2,35	2,38	2,121	2,221
M 3 x	0,35	**2,85**	2,85	2,88	2,621	2,721
M 4 x	0,35	**3,85**	3,85	3,88	3,621	3,721
M 4 x	0,50	**3,80**	3,78	3,83	3,459	3,639
M 5 x	0,50	**4,80**	4,78	4,83	4,459	4,639
M 5,5 x	0,50	**5,30**	5,28	5,33	4,959	5,139
M 6 x	0,75	**5,65**	5,62	5,70	5,188	5,424
M 7 x	0,75	**6,65**	6,62	6,70	6,188	6,424
M 8 x	0,75	**7,65**	7,62	7,70	7,188	7,424
M 8 x	1,00	**7,55**	7,52	7,62	6,917	7,217
M 9 x	0,75	**8,65**	8,62	8,70	8,188	8,424
M 9 x	1,00	**8,55**	8,52	8,62	7,917	8,217
M 10 x	0,75	**9,65**	9,62	9,70	9,188	9,424
M 10 x	1,00	**9,55**	9,52	9,62	8,917	9,217
M 10 x	1,25	**9,40**	9,36	9,47	8,647	8,982
M 11 x	0,75	**10,65**	10,62	10,70	10,188	10,424
M 11 x	1,00	**10,55**	10,52	10,62	9,917	10,217
M 12 x	1,00	**11,55**	11,52	11,62	10,917	11,217
M 12 x	1,25	**11,40**	11,36	11,47	10,647	10,982
M 12 x	1,50	**11,30**	11,26	11,38	10,376	10,751
M 14 x	1,00	**13,55**	13,52	13,62	12,917	13,217
M 14 x	1,25	**13,40**	13,36	13,47	12,647	12,982
M 14 x	1,50	**13,30**	13,26	13,38	12,376	12,751
M 15 x	1,00	**14,55**	14,52	14,62	13,917	14,217
M 15 x	1,50	**14,30**	14,26	14,38	13,376	13,751
M 16 x	1,00	**15,55**	15,52	15,62	14,917	15,217
M 16 x	1,50	**15,30**	15,26	15,38	14,376	14,751
M 17 x	1,00	**16,55**	16,52	16,62	15,917	16,217
M 17 x	1,50	**16,30**	16,26	16,38	15,376	15,751
M 18 x	1,00	**17,55**	17,52	17,62	16,917	17,217
M 18 x	1,50	**17,30**	17,26	17,38	16,376	16,751
M 18 x	2,00	**17,10**	17,05	17,20	15,835	16,310
M 20 x	1,00	**19,55**	19,52	19,62	18,917	19,217
M 20 x	1,50	**19,30**	19,26	19,38	18,376	19,751
M 24 x	1,00	**23,55**	23,52	23,62	22,917	23,217
M 24 x	1,50	**23,30**	23,26	23,38	22,376	22,751
M 24 x	2,00	**23,10**	23,05	23,20	21,835	22,310
M 27 x	1,50	**26,30**	26,26	26,38	25,376	25,751
M 30 x	1,50	**29,30**	29,26	29,38	28,376	28,751
M 33 x	1,50	**32,30**	32,26	32,38	31,376	31,751
M 36 x	1,50	**35,30**	35,26	35,38	34,376	34,751
M 39 x	1,50	**38,30**	38,26	38,38	37,376	37,751
M 42 x	1,50	**41,30**	41,26	41,38	42,376	42,751

* M 2,5 x 0,35 bis M 4 x 0,35 Kern-Ø Muttergewinde 6H

Kerndurchmesser-Toleranzfeld beim Gewindeformen (nach DIN 13, Teil 50)
Aus Festigkeitsgründen ist es nicht erforderlich, die Kerndurchmessertoleranzen der Toleranzklasse 6H einzuhalten; die Toleranzklasse 7H genügt dem Anspruch, dass die Flankenüberdeckung von Außen- und Muttergewinde 0,32 x P nicht unterschreiten soll. Außerdem haben geformte Gewinde wegen des nicht unterbrochenen Faserverlaufs und der erfolgten Kaltverfestigung im Regelfall eine höhere Festigkeit als geschnittene Gewinde.

UNC-Gewinde ASME B1.1

Nenn-Ø	Gang	Bohr-Ø	Bohr-Ø		Kern-Ø Muttergewinde 2B	
	pro inch	mm	min. mm	max. mm	min. mm	max. mm
Nr. 1 -	64	**1,68**	1,67	1,70	1,425	1,580
Nr. 2 -	56	**1,98**	1,97	2,01	1,694	1,872
Nr. 3 -	48	**2,28**	2,27	2,32	1,941	2,146
Nr. 4 -	40	**2,55**	2,54	2,59	2,157	2,385
Nr. 5 -	40	**2,90**	2,89	2,94	2,487	2,698
Nr. 6 -	32	**3,15**	3,14	3,19	2,642	2,896
Nr. 8 -	32	**3,80**	3,78	3,82	3,302	3,531
Nr. 10 -	24	**4,35**	4,33	4,39	3,683	3,937
Nr. 12 -	24	**5,00**	4,97	5,03	4,343	4,597
1/4 -	20	**5,75**	5,72	5,80	4,978	5,258
5/16 -	18	**7,30**	7,26	7,37	6,401	6,731
3/8 -	16	**8,80**	8,77	8,88	7,798	8,153
7/16 -	14	**10,30**	10,27	10,37	9,144	9,550
1/2 -	13	**11,80**	11,77	11,88	10,592	11,024
9/16 -	12	**13,30**	13,28	13,39	11,989	12,446
5/8 -	11	**14,80**	14,78	14,90	13,386	13,868
3/4 -	10	**17,90**	17,85	17,97	16,307	16,840
7/8 -	9	**21,00**	20,95	21,10	19,177	19,761
1 -	8	**24,00**	23,95	24,12	21,971	22,606

UNF-Gewinde ASME B1.1

Nenn-Ø	Gang	Bohr-Ø	Bohr-Ø		Kern-Ø Muttergewinde 2B	
	pro inch	mm	min. mm	max. mm	min. mm	max. mm
Nr. 1 -	72	**1,70**	1,69	1,72	1,473	1,610
Nr. 2 -	64	**2,00**	1,99	2,03	1,755	1,910
Nr. 3 -	56	**2,30**	2,29	2,34	2,024	2,197
Nr. 4 -	48	**2,60**	2,59	2,63	2,271	2,459
Nr. 5 -	44	**2,90**	2,89	2,93	2,550	2,741
Nr. 6 -	40	**3,20**	3,19	3,24	2,819	3,023
Nr. 8 -	36	**3,85**	3,83	3,88	3,404	3,607
Nr. 10 -	32	**4,45**	3,43	4,49	3,962	4,166
Nr. 12 -	28	**5,10**	5,07	5,13	4,496	4,724
1/4 -	28	**5,95**	5,92	5,99	5,359	5,588
5/16 -	24	**7,45**	7,42	7,50	6,782	7,036
3/8 -	24	**9,05**	9,02	9,10	8,838	8,636
7/16 -	20	**10,55**	10,48	10,58	9,728	10,033
1/2 -	20	**12,10**	12,08	12,18	11,328	11,608
9/16 -	18	**13,65**	13,61	13,72	12,751	13,081
5/8 -	18	**15,25**	15,21	15,32	14,351	14,681
3/4 -	16	**18,35**	15,30	18,41	17,323	17,678
7/8 -	14	**21,40**	21,35	21,49	20,269	20,650
1 -	12	**24,45**	24,40	24,54	23,114	23,571

(Whitworth-) Rohrgewinde G DIN EN ISO 228-1

Nenn-Ø	Gang	Bohr-Ø	Bohr-Ø		Kern-Ø Muttergewinde	
inch	pro inch	mm	min. mm	max. mm	min. mm	max. mm
G 1/16	28	**7,30**	7,28	7,35	6,561	6,843
G 1/8	28	**9,30**	9,28	9,35	8,566	8,848
G 1/4	19	**12,50**	12,48	12,55	11,445	11,890
G 3/8	19	**16,00**	15,98	16,05	14,950	15,395
G 1/2	14	**20,00**	19,98	20,12	18,631	19,172
G 5/8	14	**22,00**	21,98	22,12	20,587	21,128
G 3/4	14	**25,50**	25,48	25,62	24,117	24,658
G 7/8	14	**29,25**	29,23	29,37	27,877	28,418
G 1	11	**32,00**	31,98	32,15	30,291	30,931
G 1 1/4	11	**40,75**	40,70	40,85	38,952	39,592

SuperF-UT stabile Verhältnisse

Empfehlung für glattschneidige Fräswerkzeuge.

TC HPC HSC

Korrekturfaktoren		
a_p Schruppen > 1,5xD	v_c -25 %	f_z -25 %
mittellange Werkzeuge	v_c -40 %	f_z -40 %
extralange Werkzeuge	v_c -60 %	f_z -55 %

Material	Härte	Anwendung	a_e max.	v_c	f_z (mm/z) bei Nenn-Ø								
					3	4	6	8	10	12	16	20	25
P Bau- und Automatenstähle, unlegierte Vergütungs- und Einsatzstähle 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37, 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E, 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤850 N/mm²	Nuten	1xD	180	0,016	0,021	0,031	0,042	0,060	0,072	0,100	0,120	0,150
		Schruppen	0,75xD	210	0,018	0,024	0,036	0,048	0,069	0,083	0,110	0,140	0,170
		Schlichten	0,02xD	360	0,017	0,023	0,034	0,046	0,066	0,079	0,110	0,130	0,170
P Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20, 1.0601 C60, 1.1221 C60E 1.7043 38Cr4, 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6, 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1200 N/mm²	Nuten	1xD	160	0,014	0,019	0,029	0,038	0,055	0,066	0,090	0,110	0,140
		Schruppen	0,75xD	190	0,017	0,022	0,033	0,044	0,063	0,076	0,100	0,130	0,160
		Schlichten	0,02xD	320	0,016	0,021	0,032	0,042	0,061	0,073	0,100	0,120	0,150
P Legierte Vergütungsstähle, Werkzeug- und Schnellarbeitsstähle 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4, 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4, 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3, Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1400 N/mm²	Nuten	1xD	135	0,014	0,018	0,027	0,036	0,050	0,060	0,080	0,100	0,130
		Schruppen	0,75xD	160	0,016	0,021	0,031	0,041	0,058	0,069	0,090	0,120	0,140
		Schlichten	0,02xD	270	0,015	0,020	0,030	0,040	0,055	0,066	0,090	0,110	0,140
H Gehärteter Stahl Werkzeugstahl, Vergütungstahl, Federstahl, Schnellarbeitsstahl, Einsatzstahl, etc. z. B.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤55 HRC	Nuten	1xD	70	0,011	0,014	0,021	0,028	0,040	0,048	0,060	0,080	0,100
		Schruppen	0,33xD	100	0,014	0,018	0,027	0,036	0,052	0,062	0,080	0,100	0,130
		Schlichten	0,01xD	140	0,011	0,014	0,021	0,028	0,040	0,048	0,060	0,080	0,100
	55-63 HRC	Schruppen	0,03xD	80	0,021	0,028	0,042	0,056	0,075	0,090	0,120	0,150	0,190
		Schlichten	0,005xD	100	0,008	0,010	0,015	0,020	0,027	0,032	0,040	0,050	0,070
M Rostfreier Stahl 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤750 N/mm²	Nuten	1xD	120	0,014	0,018	0,027	0,036	0,050	0,060	0,080	0,100	0,130
		Schruppen	0,75xD	140	0,016	0,021	0,031	0,041	0,058	0,069	0,090	0,120	0,140
		Schlichten	0,02xD	240	0,015	0,020	0,030	0,040	0,055	0,066	0,090	0,110	0,140
M Rostfreier Stahl 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm²	Nuten	1xD	80	0,012	0,016	0,024	0,032	0,045	0,054	0,070	0,090	0,110
		Schruppen	0,75xD	100	0,014	0,018	0,028	0,037	0,052	0,062	0,080	0,100	0,130
		Schlichten	0,02xD	160	0,013	0,018	0,026	0,035	0,050	0,059	0,080	0,100	0,120
M Rostfreier Stahl 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≤850 N/mm²	Nuten	1xD	60	0,011	0,014	0,021	0,028	0,040	0,048	0,060	0,080	0,100
		Schruppen	0,60xD	80	0,013	0,017	0,025	0,034	0,048	0,058	0,080	0,100	0,120
		Schlichten	0,01xD	120	0,011	0,014	0,021	0,028	0,040	0,048	0,060	0,080	0,10
S Sonderlegierungen (Nickelbasis "Ni") Nimonic, Inconel, Monel, Hastelloy	≤1.300 N/mm²	Nuten	1xD	30	0,008	0,011	0,017	0,022	0,032	0,038	0,050	0,060	0,080
		Schruppen	0,60xD	40	0,010	0,013	0,020	0,027	0,038	0,046	0,060	0,080	0,100
		Schlichten	0,01xD	60	0,008	0,011	0,017	0,022	0,032	0,038	0,050	0,060	0,080
Ti Titanlegierungen ("Ti") 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	≤1.300 N/mm²	Nuten	1xD	60	0,012	0,016	0,024	0,032	0,045	0,054	0,070	0,090	0,110
		Schruppen	0,60xD	80	0,014	0,019	0,029	0,038	0,054	0,065	0,090	0,110	0,140
		Schlichten	0,02xD	120	0,013	0,018	0,026	0,035	0,050	0,059	0,080	0,100	0,120
K Gusseisen, Grauguss, Temperguss und Kugelgraphitguss 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤240 HB	Nuten	1xD	160	0,017	0,022	0,033	0,044	0,065	0,078	0,100	0,130	0,160
		Schruppen	0,75xD	190	0,019	0,025	0,038	0,051	0,075	0,090	0,120	0,150	0,190
		Schlichten	0,02xD	320	0,018	0,024	0,036	0,048	0,072	0,086	0,110	0,140	0,180
K Gusseisen, Grauguss, Temperguss und Kugelgraphitguss 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥240 HB	Nuten	1xD	140	0,015	0,020	0,030	0,040	0,055	0,066	0,090	0,110	0,140
		Schruppen	0,75xD	170	0,017	0,023	0,035	0,046	0,063	0,076	0,100	0,130	0,160
		Schlichten	0,02xD	280	0,017	0,022	0,033	0,044	0,061	0,073	0,100	0,120	0,150
N Aluminum, Alu-Knetlegierungen, Alulegierungen 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	bis 3 % Si	Nuten	1xD	500	0,020	0,026	0,039	0,052	0,080	0,096	0,130	0,160	0,200
		Schruppen	0,75xD	600	0,022	0,030	0,045	0,060	0,092	0,110	0,150	0,180	0,230
		Schlichten	0,02xD	1000	0,021	0,029	0,043	0,057	0,088	0,106	0,140	0,180	0,220
N Aluminum-Gusslegierungen 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu,-G-AlSi12CuNiMg	≥7 % Si	Nuten	1xD	230	0,017	0,022	0,033	0,044	0,060	0,072	0,100	0,120	0,150
		Schruppen	0,75xD	300	0,019	0,025	0,038	0,051	0,069	0,083	0,110	0,140	0,170
		Schlichten	0,02xD	460	0,018	0,024	0,036	0,048	0,066	0,079	0,110	0,130	0,170
N Magnesium-Legierungen MgMn2, G-MgAl8Zn1, G-MgAl6Zn3		Nuten	1xD	180	0,015	0,020	0,030	0,040	0,055	0,066	0,090	0,110	0,140
		Schruppen	0,75xD	210	0,017	0,023	0,035	0,046	0,063	0,076	0,100	0,130	0,160
		Schlichten	0,02xD	360	0,017	0,022	0,033	0,044	0,061	0,073	0,100	0,120	0,150
N NE-Metalle (Kupfer, Messing oder Messing je kurz- und langspanend) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb, 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 ... 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5, 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 ... 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850 N/mm²	Nuten	1xD	250	0,017	0,022	0,033	0,044	0,060	0,072	0,100	0,120	0,150
		Schruppen	0,75xD	290	0,019	0,025	0,038	0,051	0,069	0,083	0,110	0,140	0,170
		Schlichten	0,02xD	500	0,018	0,024	0,036	0,048	0,066	0,079	0,110	0,130	0,170

SuperF-UT instabile Verhältnisse

Empfehlung für kordelverzahnte Fräswerkzeuge.

Korrekturfaktoren		
a_p Schruppen > 1,5xD	v_c -25 %	f_z -25 %
mittellange Werkzeuge	v_c -40 %	f_z -40 %
extralange Werkzeuge	v_c -60 %	f_z -55 %

Material	Härte	Anwendung	a_e max.	v_c	f_z (mm/z) bei Nenn-Ø								
					3	4	6	8	10	12	16	20	25
P Bau- und Automatenstähle, unlegierte Vergütungs- und Einsatzstähle 1.0035 S185, 1.0486 P275N, 1.0345 P235GH, 1.0050, 1.0070, 1.8937 1.0718 11SMnPb30, 1.0736 11SMn37, 1.0402 C22, 1.1178 C30E 1.0503 C45, 1.1191 C30E, 1.0301 C10, 1.1121 C10E 1.1750 C75W, 1.2076 102Cr6, 1.2307 29CrMoV9	≤850 N/mm²	Nuten	1xD	135	0,010	0,013	0,020	0,026	0,035	0,042	0,055	0,066	0,088
		Schruppen	0,75xD	160	0,011	0,015	0,023	0,031	0,041	0,048	0,066	0,077	0,099
P Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle 1.0727 46 S20, 1.0728 60 S20, 1.0757 46SPb20, 1.0601 C60, 1.1221 C60E 1.7043 38Cr4, 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5 1.8504 34CrAl6, 1.8519 31CrMoV9, 1.8550 34CrAlNi7	850-1200 N/mm²	Nuten	1xD	120	0,010	0,013	0,020	0,026	0,035	0,042	0,055	0,066	0,088
		Schruppen	0,75xD	140	0,011	0,015	0,023	0,031	0,041	0,048	0,066	0,077	0,099
P Legierte Vergütungsstähle, Werkzeug- und Schnellarbeitsstähle 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4, 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4, 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2379 X155CrVMo12-1 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3, Spring steel = 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4	850-1400 N/mm²	Nuten	1xD	100	0,009	0,012	0,019	0,024	0,033	0,040	0,055	0,066	0,088
		Schruppen	0,75xD	120	0,011	0,014	0,021	0,029	0,039	0,045	0,066	0,077	0,099
H Gehärteter Stahl Werkzeugstahl, Vergütungstahl, Federstahl, Schnellarbeitsstahl, Einsatzstahl, etc. z. B.: 1.2344 X40CrMoV5-1; 1.2767 X45NiCrMo4; 1.2379 X155CrVMo12-1; 1.2080 X210Cr12; 1.3343 S 6-5-2	≤55 HRC	Nuten	1xD	55	0,007	0,009	0,013	0,018	0,024	0,029	0,044	0,044	0,066
		Schruppen	0,33xD	80	0,009	0,011	0,018	0,023	0,032	0,037	0,055	0,066	0,077
	55-63 HRC												
M Rostfreier Stahl 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9 USA = 303, 410, 420F, 430, 430F	≤750 N/mm²	Nuten	1xD	90	0,009	0,012	0,019	0,024	0,033	0,040	0,055	0,066	0,088
		Schruppen	0,75xD	100	0,011	0,014	0,021	0,029	0,039	0,045	0,066	0,077	0,099
M Rostfreier Stahl 1.4301X5CrNi18-10, 1.4303 X5CrNi18-12 1.4310 XCrNi18-8 USA = 304, 304L, 420	750-850 N/mm²	Nuten	1xD	65	0,009	0,011	0,017	0,022	0,031	0,037	0,044	0,066	0,077
		Schruppen	0,75xD	80	0,010	0,013	0,019	0,025	0,035	0,043	0,055	0,066	0,088
M Rostfreier Stahl 1.4438 X2CrNiMo18-15-4, 1.4404 X2CrNiMo17-12-2, 1.4571 X6CrNiTi18-10 USA = 310, 316, 316B, 316L, 317	≤850 N/mm²	Nuten	1xD	55	0,008	0,010	0,014	0,020	0,028	0,033	0,044	0,055	0,066
		Schruppen	0,60xD	70	0,009	0,012	0,018	0,023	0,033	0,040	0,055	0,066	0,088
S Sonderlegierungen (Nickelbasis "Ni") Nimonic, Inconel, Monel, Hastelloy	≤1.300 N/mm²	Nuten	1xD	25	0,007	0,009	0,013	0,018	0,024	0,029	0,044	0,044	0,066
		Schruppen	0,60xD	40	0,008	0,011	0,015	0,021	0,029	0,035	0,044	0,055	0,077
Ti Titanlegierungen ("Ti") 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5	≤1.300 N/mm²	Nuten	1xD	50	0,008	0,010	0,014	0,020	0,028	0,033	0,044	0,055	0,066
		Schruppen	0,60xD	70	0,009	0,012	0,018	0,023	0,033	0,040	0,055	0,066	0,088
K Gusseisen, Grauguss, Temperguss und Kugelgraphitguss 0.6010 EN-GL100 (GG10), 0.6020 EN-GJL-200 (GG20), 0.7050 EN-GJS-500-7 (GGG50), 0.8535 EN-GJMW-350-4 (GTW35)	≤240 HB	Nuten	1xD	120	0,010	0,013	0,020	0,026	0,035	0,042	0,055	0,066	0,088
		Schruppen	0,75xD	140	0,011	0,015	0,023	0,031	0,041	0,048	0,066	0,077	0,099
K Gusseisen, Grauguss, Temperguss und Kugelgraphitguss 0.6025 EN-GL250 (GG25), 0.6035 EN-GJL-350 (GG35), 0.7070 EN-GJS-700-2 (GGG70), 0.8170 EN-GJMB-700-2 (GTS70)	≥240 HB	Nuten	1xD	105	0,009	0,012	0,019	0,024	0,033	0,040	0,055	0,066	0,088
		Schruppen	0,75xD	130	0,011	0,014	0,021	0,029	0,039	0,045	0,066	0,077	0,099
N Aluminum, Alu-Knetlegierungen, Alulegierungen 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	≤7 % Si	Nuten	1xD	375	0,012	0,015	0,023	0,031	0,041	0,048	0,066	0,077	0,099
		Schruppen	0,75xD	440	0,013	0,018	0,026	0,035	0,047	0,056	0,077	0,099	0,121
N Aluminum-Gusslegierungen 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu,-G-AlSi12CuNiMg	≥7 % Si	Nuten	1xD	180	0,011	0,014	0,021	0,029	0,039	0,046	0,066	0,077	0,099
		Schruppen	0,75xD	210	0,012	0,017	0,024	0,032	0,044	0,053	0,066	0,088	0,110
N Magnesium-Legierungen MgMn2, G-MgAl8Zn1, G-MgAl6Zn3		Nuten	1xD	140	0,011	0,014	0,021	0,029	0,039	0,046	0,066	0,077	0,099
		Schruppen	0,75xD	170	0,012	0,017	0,024	0,032	0,044	0,053	0,066	0,088	0,110
N NE-Metalle (Kupfer, Messing oder Messing je kurz- und langspanend) 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb, 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 ... 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5, 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 ... 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10	≤850 N/mm²	Nuten	1xD	200	0,011	0,014	0,021	0,029	0,039	0,046	0,066	0,077	0,099
		Schruppen	0,75xD	230	0,012	0,017	0,024	0,032	0,044	0,053	0,066	0,088	0,110

SuperF-UT Z

TC HPC HSC

Nuten

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø 3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	0,80xD	1,00xD	180°	160	0,014	0,018	0,023	0,027	0,044	0,055	0,066	0,088	0,110
P3	schwer	0,80xD	1,00xD	180°	125	0,014	0,018	0,023	0,027	0,040	0,050	0,060	0,080	0,100
M1	leicht/mittel	0,80xD	1,00xD	180°	85	0,011	0,014	0,018	0,021	0,028	0,035	0,042	0,056	0,070
M2	schwer	0,80xD	1,00xD	180°	55	0,011	0,014	0,018	0,021	0,028	0,035	0,042	0,056	0,070
S	mittel/schwer	0,80xD	1,00xD	180°	45	0,011	0,014	0,018	0,021	0,028	0,035	0,042	0,056	0,070
	sehr schwer	0,80xD	1,00xD	180°	30	0,009	0,012	0,015	0,018	0,024	0,030	0,036	0,048	0,060

HPC Schruppen

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø 3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,20xD	53°	270	0,022	0,029	0,036	0,043	0,070	0,088	0,106	0,141	0,176
P3	schwer	L2	0,20xD	53°	210	0,022	0,029	0,036	0,043	0,064	0,080	0,096	0,128	0,160
M1	leicht/mittel	L2	0,15xD	46°	150	0,020	0,027	0,033	0,040	0,053	0,067	0,080	0,106	0,133
M2	schwer	L2	0,10xD	37°	100	0,024	0,032	0,040	0,048	0,064	0,081	0,097	0,129	0,161
S	mittel/schwer	L2	0,08xD	31°	90	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
	sehr schwer	L2	0,08xD	31°	60	0,023	0,030	0,038	0,045	0,060	0,075	0,090	0,120	0,150

HSC Schruppen

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø 3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,15xD	46°	290	0,026	0,034	0,043	0,051	0,084	0,105	0,125	0,167	0,209
P3	schwer	L2	0,15xD	46°	230	0,026	0,034	0,043	0,051	0,076	0,095	0,114	0,152	0,190
M1	leicht/mittel	L2	0,10xD	37°	170	0,024	0,032	0,040	0,048	0,064	0,081	0,097	0,129	0,161
M2	schwer	L2	0,08xD	31°	110	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
S	mittel/schwer	L2	0,05xD	26°	100	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
	sehr schwer	L2	0,05xD	26°	70	0,023	0,030	0,038	0,045	0,060	0,075	0,090	0,120	0,150

Schlichten

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø 3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,02xD	18°	320	0,019	0,025	0,032	0,038	0,062	0,077	0,092	0,123	0,154
P3	schwer	L2	0,02xD	18°	250	0,019	0,025	0,032	0,038	0,056	0,070	0,084	0,112	0,140
M1	leicht/mittel	L2	0,02xD	18°	170	0,015	0,020	0,025	0,029	0,039	0,049	0,059	0,078	0,098
M2	schwer	L2	0,01xD	11°	120	0,019	0,025	0,032	0,038	0,050	0,063	0,076	0,101	0,126
S	mittel/schwer	L2	0,01xD	11°	100	0,019	0,025	0,032	0,038	0,050	0,063	0,076	0,101	0,126
	sehr schwer	L2	0,01xD	11°	70	0,016	0,022	0,027	0,032	0,043	0,054	0,065	0,086	0,108

P1	**P** Bau- und Automatenstähle, unlegierte Vergütungs- und Einsatzstähle	1.0345 P235GH, 1.0050, 1.0503 C45, 1.2076 102Cr6
P2	**P** Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	1.1221 C60E, 1.7043 38Cr4, 1.7131 16MnCr5, 1.8550 34CrAlNi7
P3	**P** Legierte Vergütungsstähle, Werkzeug- und Schnellarbeitsstähle	1.7003 38Cr2, 1.5710 36NiCr6, 1.7225 42CrMo4, 1.2419 105WCr6
M1	**M** Rostfreier Stahl (leicht bearbeitbar/geschwefelt)	1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9
M2	**M** Rostfreier Stahl (mittelschwer bearbeitbar)	1.4301X5CrNi18-10, 1.4571 X6CrNiTi18-10, 1.4404 X2CrNiMo17-12-2
Ti	**T** Titan-Legierungen	3.7114 TiAl5Sn2,5, 3.7124 TiCu2, 3.7154 TiAl6Zr5, 3.7164 TiAl6V4

SuperF-UT Z
SuperF-UT ZS

- Hochleistungs-Schruppen auch bei hohen Schnitttiefen
- hohe Laufruhe und große Zeitspanvolumen
- HPC-Fräsen in zähen, niedrig- und hochlegierten Stählen und schwer zu bearbeitenden Sonderwerkstoffen

SuperF-UT ZS

TC HPC HSC

HPC Schruppen

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø								
						3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,15xD	46°	280	0,026	0,034	0,043	0,051	0,084	0,105	0,125	0,167	0,209
P3	schwer	L2	0,15xD	46°	220	0,026	0,034	0,043	0,051	0,076	0,095	0,114	0,152	0,190
M1	leicht/mittel	L2	0,10xD	37°	160	0,024	0,032	0,040	0,048	0,064	0,081	0,097	0,129	0,161
M2	schwer	L2	0,10xD	37°	100	0,024	0,032	0,040	0,048	0,064	0,081	0,097	0,129	0,161
S	mittel/schwer	L2	0,08xD	31°	90	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
	sehr schwer	L2	0,08xD	31°	60	0,023	0,030	0,038	0,045	0,060	0,075	0,090	0,120	0,150

HSC Schruppen

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø								
						3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,10xD	37°	310	0,031	0,041	0,052	0,062	0,101	0,127	0,152	0,202	0,253
P3	schwer	L2	0,10xD	37°	240	0,031	0,041	0,052	0,062	0,092	0,115	0,138	0,184	0,230
M1	leicht/mittel	L2	0,08xD	31°	170	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
M2	schwer	L2	0,08xD	31°	110	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
S	mittel/schwer	L2	0,05xD	26°	100	0,026	0,035	0,044	0,053	0,070	0,088	0,105	0,140	0,175
	sehr schwer	L2	0,05xD	26°	70	0,023	0,030	0,038	0,045	0,060	0,075	0,090	0,120	0,150

Schlichten

Werkstoff	Zerspanbarkeit	a_p max.	a_e max.	max. Eingriffswinkel	v_c	f_z bei Nenn-Ø								
						3	4	5	6	8	10	12	16	20
P1/P2	leicht/mittel	L2	0,01xD	11°	340	0,024	0,032	0,041	0,049	0,079	0,099	0,119	0,158	0,198
P3	schwer	L2	0,01xD	11°	270	0,024	0,032	0,041	0,049	0,072	0,090	0,108	0,144	0,180
M1	leicht/mittel	L2	0,01xD	11°	180	0,019	0,025	0,032	0,038	0,050	0,063	0,076	0,101	0,126
M2	schwer	L2	0,01xD	11°	120	0,019	0,025	0,032	0,038	0,050	0,063	0,076	0,101	0,126
S	mittel/schwer	L2	0,01xD	11°	100	0,019	0,025	0,032	0,038	0,050	0,063	0,076	0,101	0,126
	sehr schwer	L2	0,01xD	11°	70	0,016	0,022	0,027	0,032	0,043	0,054	0,065	0,086	0,108

P1	**P Bau- und Automatenstähle, unlegierte Vergütungs- und Einsatzstähle**	1.0345 P235GH, 1.0050, 1.0503 C45, 1.2076 102Cr6
P2	**P Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle**	1.1221 C60E, 1.7043 38Cr4, 1.7131 16MnCr5, 1.8550 34CrAlNi7
P3	**P Legierte Vergütungsstähle, Werkzeug- und Schnellarbeitsstähle**	1.7003 38Cr2, 1.5710 36NiCr6, 1.7225 42CrMo4, 1.2419 105WCr6
M1	**M Rostfreier Stahl (leicht bearbeitbar/geschwefelt)**	1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9
M2	**M Rostfreier Stahl (mittelschwer bearbeitbar)**	1.4301X5CrNi18-10, 1.4571 X6CrNiTi18-10, 1.4404 X2CrNiMo17-12-2
Ti	**T Titan-Legierungen**	3.7114 TiAl5Sn2,5, 3.7124 TiCu2, 3.7154 TiAl6Zr5, 3.7164 TiAl6V4

SuperF-UT ZS-r
SuperF-UT ZS-7

- höchste Zerspanleistung bei Trochoidalfräsanwendungen (TC)
- 5 oder 7 Schneiden mit niedrigem Drallwinkel für reduzierte Kontaktpunkte
- bei limitierten Schnittgeschwindigkeiten hohe Vorschübe für herausragendes Zeitspanvolumen

SuperF-UT NX Micro

Katalog-Nr. 54594

offene Nuten und Helix

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø			v_c	f_z / Ø		v_c	f_z / Ø			v_c	f_z / Ø	
					0,8	1,0	1,2		1,5	1,8		2,0	2,2	2,5		2,8	3,0
P	Unlegierter Stahl	1,00xD	1,00xD	**140**	0,0072	0,0090	0,0108	**168**	0,0135	0,0162	**182**	0,0180	0,0198	0,0225	**196**	0,0252	0,0270
P	Niedriglegierter Stahl	1,00xD	1,00xD	**140**	0,0064	0,0080	0,0096	**168**	0,0120	0,0144	**182**	0,0160	0,0176	0,0200	**196**	0,0224	0,0240
P	Hochlegierter Stahl und Werkzeugstahl	1,00xD	0,75xD	**140**	0,0048	0,0060	0,0072	**168**	0,0090	0,0108	**182**	0,0120	0,0132	0,0150	**196**	0,0168	0,0180
M	Nichtrostender Stahl, ferritisch/martensitisch	1,00xD	1,00xD	**140**	0,0064	0,0080	0,0096	**168**	0,0120	0,0144	**182**	0,0160	0,0176	0,0200	**196**	0,0224	0,0240
M	Nichtrostender Stahl, austenitisch	1,00xD	1,00xD	**120**	0,0056	0,0070	0,0084	**144**	0,0105	0,0126	**156**	0,0140	0,0154	0,0175	**168**	0,0196	0,0210
M	Duplexstahl, hochfeste nichtrostende Stähle	1,00xD	0,75xD	**90**	0,0049	0,0061	0,0073	**108**	0,0092	0,0110	**117**	0,0122	0,0135	0,0153	**126**	0,0171	0,0184
K	Grauguss	1,00xD	1,00xD	**120**	0,0056	0,0070	0,0084	**144**	0,0105	0,0126	**156**	0,0140	0,0154	0,0175	**168**	0,0196	0,0210
K	Gusseisen mit Kugelgraphit																
K	Temperguss	1,00xD	1,00xD	**100**	0,0050	0,0062	0,0075	**120**	0,0093	0,0112	**130**	0,0124	0,0137	0,0156	**140**	0,0174	0,0187
K	GJV & ADI																
N	Aluminium-Knetlegierungen	1,00xD	1,00xD	**170**	0,0096	0,0120	0,0144	**204**	0,0180	0,0216	**221**	0,0240	0,0264	0,0300	**238**	0,0336	0,0360
N	Aluminium-Gusslegierungen																
N	Kupfer und Kupferlegierungen	1,00xD	1,00xD	**125**	0,0088	0,0110	0,0133	**150**	0,0166	0,0199	**162,5**	0,0221	0,0243	0,0276	**175**	0,0309	0,0331
S	Warmfeste Legierungen, Fe-Basis	1,00xD	0,50xD	**100**	0,0036	0,0045	0,0054	**120**	0,0068	0,0081	**130**	0,0090	0,0099	0,0113	**140**	0,0126	0,0135
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	1,00xD	0,50xD	**60**	0,0029	0,0037	0,0044	**72**	0,0055	0,0066	**78**	0,0073	0,0080	0,0091	**84**	0,0102	0,0110
S	Titanlegierungen & Reintitan	1,00xD	0,75xD	**100**	0,0060	0,0075	0,0090	**120**	0,0113	0,0135	**130**	0,0150	0,0165	0,0188	**140**	0,0210	0,0225
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	1,00xD	0,25xD	**35**	0,0032	0,0040	0,0048	**42**	0,0060	0,0072	**46**	0,0080	0,0088	0,0100	**49**	0,0112	0,0120

Rampen und geschlossene Nuten

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø			v_c	f_z / Ø		v_c	f_z / Ø			v_c	f_z / Ø	
					0,8	1,0	1,2		1,5	1,8		2,0	2,2	2,5		2,8	3,0
P	Unlegierter Stahl	1,00xD	1,00xD	**100**	0,0043	0,0054	0,0065	**120**	0,0081	0,0097	**130**	0,0108	0,0119	0,0135	**140**	0,0151	0,0162
P	Niedriglegierter Stahl	1,00xD	1,00xD	**100**	0,0038	0,0048	0,0058	**120**	0,0072	0,0086	**130**	0,0096	0,0106	0,0120	**140**	0,0134	0,0144
P	Hochlegierter Stahl und Werkzeugstahl	1,00xD	0,75xD	**100**	0,0029	0,0036	0,0043	**120**	0,0054	0,0065	**130**	0,0072	0,0079	0,0090	**140**	0,0101	0,0108
M	Nichtrostender Stahl, ferritisch/martensitisch	1,00xD	1,00xD	**100**	0,0038	0,0048	0,0058	**120**	0,0072	0,0086	**130**	0,0096	0,0106	0,0120	**140**	0,0134	0,0144
M	Nichtrostender Stahl, austenitisch	1,00xD	1,00xD	**90**	0,0034	0,0042	0,0050	**108**	0,0063	0,0076	**117**	0,0084	0,0092	0,0105	**126**	0,0118	0,0126
M	Duplexstahl, hochfeste nichtrostende Stähle	1,00xD	0,75xD	**65**	0,0029	0,0037	0,0044	**78**	0,0055	0,0066	**85**	0,0073	0,0081	0,0092	**91**	0,0103	0,0110
K	Grauguss	1,00xD	1,00xD	**90**	0,0034	0,0042	0,0050	**108**	0,0063	0,0076	**117**	0,0084	0,0092	0,0105	**126**	0,0118	0,0126
K	Gusseisen mit Kugelgraphit																
K	Temperguss	1,00xD	1,00xD	**75**	0,0030	0,0037	0,0045	**90**	0,0056	0,0067	**98**	0,0075	0,0082	0,0093	**105**	0,0105	0,0112
K	GJV & ADI																
N	Aluminium-Knetlegierungen	1,00xD	1,00xD	**120**	0,0058	0,0072	0,0086	**144**	0,0108	0,0130	**156**	0,0144	0,0158	0,0180	**168**	0,0202	0,0216
N	Aluminium-Gusslegierungen																
N	Kupfer und Kupferlegierungen	1,00xD	1,00xD	**90**	0,0053	0,0066	0,0080	**108**	0,0099	0,0119	**117**	0,0133	0,0146	0,0166	**126**	0,0186	0,0199
S	Warmfeste Legierungen, Fe-Basis	1,00xD	0,50xD	**75**	0,0022	0,0027	0,0032	**90**	0,0041	0,0049	**98**	0,0054	0,0059	0,0068	**105**	0,0076	0,0081
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	1,00xD	0,50xD	**45**	0,0018	0,0022	0,0026	**54**	0,0033	0,0039	**59**	0,0044	0,0048	0,0055	**63**	0,0061	0,0066
S	Titanlegierungen & Reintitan	1,00xD	0,75xD	**70**	0,0036	0,0045	0,0054	**84**	0,0068	0,0081	**91**	0,0090	0,0099	0,0113	**98**	0,0126	0,0135
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	1,00xD	0,25xD	**25**	0,0019	0,0024	0,0029	**30**	0,0036	0,0043	**33**	0,0048	0,0053	0,0060	**35**	0,0067	0,0072

Schruppen

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø			v_c	f_z / Ø		v_c	f_z / Ø			v_c	f_z / Ø	
					0,8	1,0	1,2		1,5	1,8		2,0	2,2	2,5		2,8	3,0
P	Unlegierter Stahl	0,25xD	2,00xD	**170**	0,0113	0,0142	0,0170	**204**	0,0213	0,0255	**221**	0,0284	0,0312	0,0354	**238**	0,0397	0,0425
P	Niedriglegierter Stahl	0,25xD	2,00xD	**170**	0,0101	0,0126	0,0151	**204**	0,0189	0,0227	**221**	0,0252	0,0277	0,0315	**238**	0,0353	0,0378
P	Hochlegierter Stahl und Werkzeugstahl	0,20xD	2,00xD	**170**	0,0076	0,0095	0,0113	**204**	0,0142	0,0170	**221**	0,0189	0,0208	0,0236	**238**	0,0265	0,0284
M	Nichtrostender Stahl, ferritisch/martensitisch	0,25xD	2,00xD	**170**	0,0101	0,0126	0,0151	**204**	0,0189	0,0227	**221**	0,0252	0,0277	0,0315	**238**	0,0353	0,0378
M	Nichtrostender Stahl, austenitisch	0,20xD	2,00xD	**145**	0,0088	0,0110	0,0132	**174**	0,0165	0,0198	**189**	0,0221	0,0243	0,0276	**203**	0,0309	0,0331
M	Duplexstahl, hochfeste nichtrostende Stähle	0,20xD	2,00xD	**105**	0,0077	0,0096	0,0116	**126**	0,0145	0,0174	**137**	0,0193	0,0212	0,0241	**147**	0,0270	0,0289
K	Grauguss	0,25xD	2,00xD	**145**	0,0088	0,0110	0,0132	**174**	0,0165	0,0198	**189**	0,0221	0,0243	0,0276	**203**	0,0309	0,0331
K	Gusseisen mit Kugelgraphit																
K	Temperguss	0,25xD	2,00xD	**120**	0,0078	0,0098	0,0118	**144**	0,0147	0,0176	**156**	0,0196	0,0216	0,0245	**168**	0,0274	0,0294
K	GJV & ADI																
N	Aluminium-Knetlegierungen	0,25xD	2,00xD	**200**	0,0151	0,0189	0,0227	**240**	0,0284	0,0340	**260**	0,0378	0,0416	0,0473	**280**	0,0529	0,0567
N	Aluminium-Gusslegierungen																
N	Kupfer und Kupferlegierungen	0,25xD	2,00xD	**150**	0,0139	0,0174	0,0209	**180**	0,0261	0,0313	**195**	0,0348	0,0383	0,0435	**210**	0,0487	0,0522
S	Warmfeste Legierungen, Fe-Basis	0,15xD	2,00xD	**120**	0,0057	0,0071	0,0085	**144**	0,0106	0,0128	**156**	0,0142	0,0156	0,0177	**168**	0,0198	0,0213
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,15xD	2,00xD	**70**	0,0046	0,0058	0,0069	**84**	0,0086	0,0104	**91**	0,0115	0,0127	0,0144	**98**	0,0161	0,0173
S	Titanlegierungen & Reintitan	0,20xD	2,00xD	**115**	0,0095	0,0118	0,0142	**138**	0,0177	0,0213	**150**	0,0236	0,0260	0,0295	**161**	0,0331	0,0354
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	0,05xD	2,00xD	**45**	0,0050	0,0063	0,0076	**54**	0,0095	0,0113	**59**	0,0126	0,0139	0,0158	**63**	0,0176	0,0189

Schlichten

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø			v_c	f_z / Ø		v_c	f_z / Ø			v_c	f_z / Ø	
					0,8	1,0	1,2		1,5	1,8		2,0	2,2	2,5		2,8	3,0
P	Unlegierter Stahl	0,03xD	2,00xD	**180**	0,0086	0,0108	0,0130	**216**	0,0162	0,0194	**234**	0,0216	0,0238	0,0270	**252**	0,0302	0,0324
P	Niedriglegierter Stahl	0,03xD	2,00xD	**180**	0,0077	0,0096	0,0115	**216**	0,0144	0,0173	**234**	0,0192	0,0211	0,0240	**252**	0,0269	0,0288
P	Hochlegierter Stahl und Werkzeugstahl	0,03xD	2,00xD	**180**	0,0058	0,0072	0,0086	**216**	0,0108	0,0130	**234**	0,0144	0,0158	0,0180	**252**	0,0202	0,0216
M	Nichtrostender Stahl, ferritisch/martensitisch	0,03xD	2,00xD	**180**	0,0077	0,0096	0,0115	**216**	0,0144	0,0173	**234**	0,0192	0,0211	0,0240	**252**	0,0269	0,0288
M	Nichtrostender Stahl, austenitisch	0,03xD	2,00xD	**155**	0,0067	0,0084	0,0101	**186**	0,0126	0,0151	**202**	0,0168	0,0185	0,0210	**217**	0,0235	0,0252
M	Duplexstahl, hochfeste nichtrostende Stähle	0,03xD	2,00xD	**115**	0,0059	0,0073	0,0088	**138**	0,0110	0,0132	**150**	0,0147	0,0162	0,0184	**161**	0,0206	0,0220
K	Grauguss	0,03xD	2,00xD	**155**	0,0067	0,0084	0,0101	**186**	0,0126	0,0151	**202**	0,0168	0,0185	0,0210	**217**	0,0235	0,0252
K	Gusseisen mit Kugelgraphit																
K	Temperguss	0,03xD	2,00xD	**130**	0,0060	0,0075	0,0090	**156**	0,0112	0,0134	**169**	0,0149	0,0164	0,0187	**182**	0,0209	0,0224
K	GJV & ADI																
N	Aluminium-Knetlegierungen	0,03xD	2,00xD	**220**	0,0115	0,0144	0,0173	**264**	0,0216	0,0259	**286**	0,0288	0,0317	0,0360	**308**	0,0403	0,0432
N	Aluminium-Gusslegierungen																
N	Kupfer und Kupferlegierungen	0,03xD	2,00xD	**160**	0,0106	0,0133	0,0159	**192**	0,0199	0,0239	**208**	0,0265	0,0292	0,0331	**224**	0,0371	0,0398
S	Warmfeste Legierungen, Fe-Basis	0,03xD	2,00xD	**130**	0,0043	0,0054	0,0065	**156**	0,0081	0,0097	**169**	0,0108	0,0119	0,0135	**182**	0,0151	0,0162
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,03xD	2,00xD	**75**	0,0035	0,0044	0,0053	**90**	0,0066	0,0079	**98**	0,0088	0,0096	0,0110	**105**	0,0123	0,0132
S	Titanlegierungen & Reintitan	0,03xD	2,00xD	**120**	0,0072	0,0090	0,0108	**144**	0,0135	0,0162	**156**	0,0180	0,0198	0,0225	**168**	0,0252	0,0270
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	0,02xD	2,00xD	**45**	0,0038	0,0048	0,0058	**54**	0,0072	0,0086	**59**	0,0096	0,0106	0,0120	**63**	0,0134	0,0144

Bohren

	Material/ISO-Werkstoff	a_p max.	v_c	f_z / Ø			v_c	f_z / Ø		v_c	f_z / Ø			v_c	f_z / Ø	
				0,8	1,0	1,2		1,5	1,8		2,0	2,2	2,5		2,8	3,0
P	Unlegierter Stahl	1,00xD	**100**	0,0014	0,0018	0,0022	**120**	0,0027	0,0032	**130**	0,0036	0,0040	0,0045	**140**	0,0050	0,0054
P	Niedriglegierter Stahl	1,00xD	**100**	0,0013	0,0016	0,0019	**120**	0,0024	0,0029	**130**	0,0032	0,0035	0,0040	**140**	0,0045	0,0048
P	Hochlegierter Stahl und Werkzeugstahl	0,50xD	**90**	0,0010	0,0012	0,0014	**108**	0,0018	0,0022	**117**	0,0024	0,0026	0,0030	**126**	0,0034	0,0036
M	Nichtrostender Stahl, ferritisch/martensitisch	0,75xD	**90**	0,0012	0,0015	0,0018	**108**	0,0023	0,0027	**117**	0,0030	0,0033	0,0038	**126**	0,0042	0,0045
M	Nichtrostender Stahl, austenitisch	0,50xD	**85**	0,0011	0,0014	0,0017	**102**	0,0021	0,0025	**111**	0,0028	0,0031	0,0035	**119**	0,0039	0,0042
M	Duplexstahl, hochfeste nichtrostende Stähle	0,25xD	**65**	0,0010	0,0012	0,0014	**78**	0,0018	0,0022	**85**	0,0024	0,0026	0,0030	**91**	0,0034	0,0036
K	Grauguss	1,00xD	**90**	0,0011	0,0014	0,0017	**108**	0,0021	0,0025	**117**	0,0028	0,0031	0,0035	**126**	0,0039	0,0042
K	Gusseisen mit Kugelgraphit															
K	Temperguss	1,00xD	**75**	0,0010	0,0012	0,0014	**90**	0,0018	0,0022	**98**	0,0024	0,0026	0,0030	**105**	0,0034	0,0036
K	GJV & ADI															
N	Aluminium-Knetlegierungen	0,50xD	**125**	0,0019	0,0024	0,0029	**150**	0,0036	0,0043	**163**	0,0048	0,0053	0,0060	**175**	0,0067	0,0072
N	Aluminium-Gusslegierungen															
N	Kupfer und Kupferlegierungen	0,50xD	**90**	0,0018	0,0022	0,0026	**108**	0,0033	0,0040	**117**	0,0044	0,0048	0,0055	**126**	0,0062	0,0066
S	Warmfeste Legierungen, Fe-Basis	0,25xD	**75**	0,0007	0,0009	0,0011	**90**	0,0014	0,0016	**98**	0,0018	0,0020	0,0023	**105**	0,0025	0,0027
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,25xD	**45**	0,0006	0,0008	0,0009	**54**	0,0011	0,0014	**59**	0,0015	0,0017	0,0019	**63**	0,0021	0,0023
S	Titanlegierungen & Reintitan	0,25xD	**70**	0,0012	0,0015	0,0018	**84**	0,0023	0,0027	**91**	0,0030	0,0033	0,0038	**98**	0,0042	0,0045

SuperF-UT NX Micro

Katalog-Nr. 54595

offene Nuten und Helix

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø 1,0	f_z / Ø 1,2	v_c	f_z / Ø 1,5	v_c	f_z / Ø 2,0	f_z / Ø 2,5	v_c	f_z / Ø 2,8	f_z / Ø 3,0
P	Unlegierter Stahl	1,00xD	0,50xD	112	0,0081	0,0097	134	0,0122	146	0,0162	0,0203	157	0,0227	0,0243
P	Niedriglegierter Stahl	1,00xD	0,50xD	112	0,0072	0,0086	134	0,0108	146	0,0144	0,0180	157	0,0202	0,0216
P	Hochlegierter Stahl und Werkzeugstahl	1,00xD	0,25xD	112	0,0054	0,0065	134	0,0081	146	0,0108	0,0135	157	0,0151	0,0162
M	Nichtrostender Stahl, ferritisch/martensitisch	1,00xD	0,25xD	112	0,0072	0,0086	134	0,0108	146	0,0144	0,0180	157	0,0202	0,0216
M	Nichtrostender Stahl, austenitisch	1,00xD	0,25xD	96	0,0063	0,0076	115	0,0095	125	0,0126	0,0158	134	0,0176	0,0189
M	Duplexstahl, hochfeste nichtrostende Stähle	1,00xD	0,25xD	71	0,0055	0,0066	85	0,0083	92	0,0110	0,0138	99	0,0154	0,0165
K	Grauguss	1,00xD	0,50xD	96	0,0063	0,0076	115	0,0095	125	0,0126	0,0158	134	0,0176	0,0189
K	Gusseisen mit Kugelgraphit													
K	Temperguss	1,00xD	0,50xD	80	0,0056	0,0067	96	0,0084	104	0,0112	0,0140	112	0,0157	0,0168
K	GJV & ADI													
N	Aluminium-Knetlegierungen	1,00xD	0,50xD	136	0,0108	0,0130	163	0,0162	177	0,0216	0,0270	190	0,0302	0,0324
N	Aluminium-Gusslegierungen													
N	Kupfer und Kupferlegierungen	1,00xD	0,50xD	100	0,0099	0,0119	120	0,0149	130	0,0199	0,0249	140	0,0278	0,0298
S	Warmfeste Legierungen, Fe-Basis	1,00xD	0,25xD	80	0,0041	0,0049	96	0,0061	104	0,0081	0,0101	112	0,0113	0,0122
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	1,00xD	0,25xD	46	0,0033	0,0039	55	0,0049	60	0,0066	0,0082	64	0,0092	0,0099
S	Titanlegierungen & Reintitan	1,00xD	0,25xD	72	0,0068	0,0081	86	0,0101	94	0,0135	0,0169	101	0,0189	0,0203
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	1,00xD	0,10xD	26	0,0036	0,0043	31	0,0054	34	0,0072	0,0090	36	0,0101	0,0108

Rampen und geschlossene Nuten

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø 1,0	f_z / Ø 1,2	v_c	f_z / Ø 1,5	v_c	f_z / Ø 2,0	f_z / Ø 2,5	v_c	f_z / Ø 2,8	f_z / Ø 3,0
P	Unlegierter Stahl	1,00xD	0,50xD	78	0,0049	0,0058	94	0,0073	102	0,0097	0,0122	110	0,0136	0,0146
P	Niedriglegierter Stahl	1,00xD	0,50xD	78	0,0043	0,0052	94	0,0065	102	0,0086	0,0108	110	0,0121	0,0130
P	Hochlegierter Stahl und Werkzeugstahl	1,00xD	0,25xD	78	0,0032	0,0039	94	0,0049	102	0,0065	0,0081	110	0,0091	0,0097
M	Nichtrostender Stahl, ferritisch/martensitisch	1,00xD	0,25xD	78	0,0043	0,0052	94	0,0065	102	0,0086	0,0108	110	0,0121	0,0130
M	Nichtrostender Stahl, austenitisch	1,00xD	0,25xD	67	0,0038	0,0045	81	0,0057	87	0,0076	0,0095	94	0,0106	0,0113
M	Duplexstahl, hochfeste nichtrostende Stähle	1,00xD	0,25xD	50	0,0033	0,0040	60	0,0050	65	0,0066	0,0083	70	0,0093	0,0099
K	Grauguss	1,00xD	0,50xD	67	0,0038	0,0045	81	0,0057	87	0,0076	0,0095	94	0,0106	0,0113
K	Gusseisen mit Kugelgraphit													
K	Temperguss	1,00xD	0,50xD	56	0,0034	0,0040	67	0,0050	73	0,0067	0,0084	78	0,0094	0,0101
K	GJV & ADI													
N	Aluminium-Knetlegierungen	1,00xD	0,50xD	95	0,0065	0,0078	114	0,0097	124	0,0130	0,0162	133	0,0181	0,0194
N	Aluminium-Gusslegierungen													
N	Kupfer und Kupferlegierungen	1,00xD	0,50xD	70	0,0060	0,0072	84	0,0089	91	0,0119	0,0149	98	0,0167	0,0179
S	Warmfeste Legierungen, Fe-Basis	1,00xD	0,25xD	56	0,0024	0,0029	67	0,0036	73	0,0049	0,0061	78	0,0068	0,0073
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	1,00xD	0,25xD	32	0,0020	0,0024	39	0,0030	42	0,0039	0,0049	45	0,0055	0,0059
S	Titanlegierungen & Reintitan	1,00xD	0,25xD	50	0,0041	0,0049	60	0,0061	66	0,0081	0,0101	71	0,0113	0,0122
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	1,00xD	0,10xD	18	0,0022	0,0026	22	0,0032	24	0,0043	0,0054	25	0,0060	0,0065

Schruppen

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø 1,0	f_z / Ø 1,2	v_c	f_z / Ø 1,5	v_c	f_z / Ø 2,0	f_z / Ø 2,5	v_c	f_z / Ø 2,8	f_z / Ø 3,0
P	Unlegierter Stahl	0,10xD	5,00xD	134	0,0128	0,0153	161	0,0191	174	0,0255	0,0319	188	0,0357	0,0383
P	Niedriglegierter Stahl	0,10xD	5,00xD	134	0,0113	0,0136	161	0,0170	174	0,0227	0,0284	188	0,0318	0,0340
P	Hochlegierter Stahl und Werkzeugstahl	0,08xD	5,00xD	134	0,0085	0,0102	161	0,0128	174	0,0170	0,0213	188	0,0238	0,0255
M	Nichtrostender Stahl, ferritisch/martensitisch	0,10xD	5,00xD	134	0,0113	0,0136	161	0,0170	174	0,0227	0,0284	188	0,0318	0,0340
M	Nichtrostender Stahl, austenitisch	0,08xD	5,00xD	115	0,0099	0,0119	138	0,0149	150	0,0198	0,0248	161	0,0278	0,0298
M	Duplexstahl, hochfeste nichtrostende Stähle	0,05xD	5,00xD	86	0,0087	0,0104	103	0,0130	112	0,0174	0,0217	120	0,0243	0,0260
K	Grauguss	0,10xD	5,00xD	115	0,0099	0,0119	138	0,0149	150	0,0198	0,0248	161	0,0278	0,0298
K	Gusseisen mit Kugelgraphit													
K	Temperguss	0,10xD	5,00xD	96	0,0088	0,0106	115	0,0132	125	0,0176	0,0220	134	0,0247	0,0265
K	GJV & ADI													
N	Aluminium-Knetlegierungen	0,15xD	5,00xD	163	0,0170	0,0204	196	0,0255	212	0,0340	0,0425	228	0,0476	0,0510
N	Aluminium-Gusslegierungen													
N	Kupfer und Kupferlegierungen	0,12xD	5,00xD	120	0,0157	0,0188	144	0,0235	156	0,0313	0,0392	168	0,0438	0,0470
S	Warmfeste Legierungen, Fe-Basis	0,08xD	5,00xD	96	0,0064	0,0077	115	0,0096	125	0,0128	0,0159	134	0,0179	0,0191
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,05xD	5,00xD	55	0,0052	0,0062	66	0,0078	72	0,0104	0,0130	77	0,0145	0,0155
S	Titanlegierungen & Reintitan	0,08xD	5,00xD	86	0,0106	0,0128	103	0,0159	112	0,0213	0,0266	120	0,0298	0,0319
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	0,03xD	5,00xD	31	0,0057	0,0068	37	0,0085	40	0,0113	0,0142	43	0,0159	0,0170

Schlichten

	Material/ISO-Werkstoff	a_e max.	a_p max.	v_c	f_z / Ø		v_c	f_z / Ø	v_c	f_z / Ø		v_c	f_z / Ø	
					1,0	1,2		1,5		2,0	2,5		2,8	3,0
P	Unlegierter Stahl	0,02xD	5,00xD	**146**	0,0097	0,0117	**175**	0,0146	**190**	0,0194	0,0243	**204**	0,0272	0,0292
P	Niedriglegierter Stahl	0,02xD	5,00xD	**146**	0,0086	0,0104	**175**	0,0130	**190**	0,0173	0,0216	**204**	0,0242	0,0259
P	Hochlegierter Stahl und Werkzeugstahl	0,02xD	5,00xD	**146**	0,0065	0,0078	**175**	0,0097	**190**	0,0130	0,0162	**204**	0,0181	0,0194
M	Nichtrostender Stahl, ferritisch/martensitisch	0,02xD	5,00xD	**146**	0,0086	0,0104	**175**	0,0130	**190**	0,0173	0,0216	**204**	0,0242	0,0259
M	Nichtrostender Stahl, austenitisch	0,02xD	5,00xD	**125**	0,0076	0,0091	**150**	0,0113	**163**	0,0151	0,0189	**175**	0,0212	0,0227
M	Duplexstahl, hochfeste nichtrostende Stähle	0,02xD	5,00xD	**93**	0,0066	0,0079	**112**	0,0099	**121**	0,0132	0,0165	**130**	0,0185	0,0198
K	Grauguss	0,02xD	5,00xD	**125**	0,0076	0,0091	**150**	0,0113	**163**	0,0151	0,0189	**175**	0,0212	0,0227
K	Gusseisen mit Kugelgraphit													
K	Temperguss	0,02xD	5,00xD	**104**	0,0067	0,0081	**125**	0,0101	**135**	0,0134	0,0168	**146**	0,0188	0,0202
K	GJV & ADI													
N	Aluminium-Knetlegierungen	0,02xD	5,00xD	**177**	0,0130	0,0156	**212**	0,0194	**230**	0,0259	0,0324	**248**	0,0363	0,0389
N	Aluminium-Gusslegierungen													
N	Kupfer und Kupferlegierungen	0,02xD	5,00xD	**130**	0,0119	0,0143	**156**	0,0179	**169**	0,0239	0,0298	**182**	0,0334	0,0358
S	Warmfeste Legierungen, Fe-Basis	0,02xD	5,00xD	**104**	0,0049	0,0058	**125**	0,0073	**135**	0,0097	0,0122	**146**	0,0136	0,0146
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,02xD	5,00xD	**60**	0,0039	0,0047	**72**	0,0059	**78**	0,0079	0,0099	**84**	0,0111	0,0118
S	Titanlegierungen & Reintitan	0,02xD	5,00xD	**94**	0,0081	0,0097	**113**	0,0122	**122**	0,0162	0,0203	**132**	0,0227	0,0243
H	Gehärteter Stahl, gehärtet und angelassen, < 55 HRC	0,01xD	5,00xD	**34**	0,0043	0,0052	**41**	0,0065	**44**	0,0086	0,0108	**48**	0,0121	0,0130

Bohren

	Material/ISO-Werkstoff	a_e max.	v_c	f_z / Ø		v_c	f_z / Ø	v_c	f_z / Ø		v_c	f_z / Ø	
				1,0	1,2		1,5		2,0	2,5		2,8	3,0
P	Unlegierter Stahl	0,50xD	**84**	0,0097	0,0117	**175**	0,0146	**190**	0,0194	0,0243	**204**	0,0272	0,0292
P	Niedriglegierter Stahl	0,50xD	**84**	0,0013	0,0015	**101**	0,0019	**109**	0,0026	0,0032	**118**	0,0036	0,0038
P	Hochlegierter Stahl und Werkzeugstahl	0,25xD	**84**	0,0010	0,0012	**101**	0,0014	**109**	0,0019	0,0024	**118**	0,0027	0,0029
M	Nichtrostender Stahl, ferritisch/martensitisch	0,25xD	**84**	0,0013	0,0015	**101**	0,0019	**109**	0,0026	0,0032	**118**	0,0036	0,0038
M	Nichtrostender Stahl, austenitisch	0,25xD	**72**	0,0011	0,0013	**86**	0,0017	**94**	0,0022	0,0028	**101**	0,0031	0,0034
M	Duplexstahl, hochfeste nichtrostende Stähle	0,25xD	**54**	0,0010	0,0012	**65**	0,0015	**70**	0,0020	0,0024	**76**	0,0027	0,0029
K	Grauguss	0,50xD	**72**	0,0011	0,0013	**86**	0,0017	**94**	0,0022	0,0028	**101**	0,0031	0,0034
K	Gusseisen mit Kugelgraphit												
K	Temperguss	0,50xD	**60**	0,0010	0,0012	**72**	0,0015	**78**	0,0020	0,0025	**84**	0,0028	0,0030
K	GJV & ADI												
N	Aluminium-Knetlegierungen	0,50xD	**102**	0,0019	0,0023	**122**	0,0029	**133**	0,0038	0,0048	**143**	0,0054	0,0058
N	Aluminium-Gusslegierungen												
N	Kupfer und Kupferlegierungen	0,50xD	**75**	0,0018	0,0021	**90**	0,0027	**97,5**	0,0035	0,0044	**105**	0,0049	0,0053
S	Warmfeste Legierungen, Fe-Basis	0,25xD	**60**	0,0007	0,0009	**72**	0,0011	**78**	0,0014	0,0018	**84**	0,0020	0,0022
S	Warmfeste Legierungen, Ni-Basis, CO-Basis	0,25xD	**34**	0,0006	0,0007	**41**	0,0009	**44**	0,0012	0,0015	**48**	0,0016	0,0018
S	Titanlegierungen & Reintitan	0,25xD	**54**	0,0012	0,0014	**65**	0,0018	**70**	0,0024	0,0030	**76**	0,0034	0,0036

SuperF-UT NX

TC HPC HSC

Nuten

Werkstoff	Härte	a_p max.	a_e max.	v_c	f_z bei Nenn-Ø							
					4	5	6	8	10	12	16	20
P1	≤850 N/mm²	1xD	1xD	270	0,017	0,021	0,025	0,034	0,050	0,060	0,080	0,100
P2	850-1200 N/mm²	1xD	1xD	230	0,017	0,021	0,025	0,034	0,050	0,060	0,080	0,100
P3	850-1400 N/mm²	1xD	1xD	180	0,014	0,018	0,021	0,028	0,045	0,054	0,072	0,090
M1	≤750 N/mm²	1xD	1xD	120	0,014	0,018	0,021	0,028	0,045	0,054	0,072	0,090
M2	750-950 N/mm²	1xD	1xD	80	0,013	0,016	0,019	0,026	0,040	0,048	0,064	0,080
K2	≥240 HB	1xD	1xD	150	0,017	0,021	0,025	0,034	0,050	0,060	0,080	0,100
N1	≤7 % Si	1xD	1xD	500	0,022	0,028	0,033	0,044	0,065	0,078	0,104	0,130
N2	≥7 % Si	1xD	1xD	340	0,018	0,023	0,027	0,036	0,055	0,066	0,088	0,110
Ti	≤1300 N/mm²	1xD	1xD	60	0,013	0,016	0,019	0,026	0,040	0,048	0,064	0,080

HPC Schruppen

Werkstoff	Härte	a_p max.	a_e max.	v_c	f_z bei Nenn-Ø							
					4	5	6	8	10	12	16	20
P1	≤850 N/mm²	1,5xD	0,40xD	350	0,021	0,026	0,032	0,042	0,063	0,075	0,100	0,125
P2	850-1200 N/mm²	1,5xD	0,40xD	290	0,021	0,026	0,032	0,042	0,063	0,075	0,100	0,125
P3	850-1400 N/mm²	1,5xD	0,33xD	260	0,018	0,023	0,027	0,036	0,059	0,070	0,094	0,117
M1	≤750 N/mm²	1,5xD	0,33xD	160	0,018	0,023	0,027	0,036	0,059	0,070	0,094	0,117
M2	750-950 N/mm²	1,5xD	0,25xD	120	0,019	0,024	0,029	0,038	0,060	0,072	0,096	0,120
K2	≥240 HB	1,5xD	0,40xD	190	0,021	0,026	0,032	0,042	0,063	0,075	0,100	0,125
N1	≤7 % Si	1,5xD	0,40xD	600	0,028	0,034	0,041	0,055	0,081	0,098	0,130	0,163
N2	≥7 % Si	1,5xD	0,40xD	440	0,023	0,028	0,034	0,045	0,069	0,083	0,110	0,138
Ti	≤1300 N/mm²	1,5xD	0,33xD	110	0,017	0,021	0,025	0,033	0,052	0,062	0,083	0,104

HSC Schlichten

Werkstoff	Härte	a_p max.	a_e max.	v_c	f_z bei Nenn-Ø							
					4	5	6	8	10	12	16	20
P1	≤850 N/mm²	2xD	0,02xD	540	0,018	0,023	0,028	0,037	0,055	0,066	0,088	0,110
P2	850-1200 N/mm²	2xD	0,02xD	460	0,018	0,023	0,028	0,037	0,055	0,066	0,088	0,110
P3	850-1400 N/mm²	2xD	0,02xD	350	0,015	0,019	0,023	0,031	0,050	0,059	0,079	0,099
M1	≤750 N/mm²	2xD	0,02xD	220	0,015	0,019	0,023	0,031	0,050	0,059	0,079	0,099
M2	750-950 N/mm²	2xD	0,02xD	160	0,014	0,018	0,021	0,028	0,044	0,053	0,070	0,088
K2	≥240 HB	2xD	0,02xD	300	0,018	0,023	0,028	0,037	0,055	0,066	0,088	0,110
N1	≤7 % Si	2xD	0,02xD	1000	0,024	0,030	0,036	0,048	0,072	0,086	0,114	0,143
N2	≥7 % Si	2xD	0,02xD	680	0,020	0,025	0,030	0,040	0,061	0,073	0,097	0,121
Ti	≤1300 N/mm²	2xD	0,02xD	130	0,014	0,018	0,021	0,028	0,044	0,053	0,070	0,088

Rampen, Helix, Stechen

Werkstoff	Härte	Ramptiefe (a_p)	max. Rampwinkel	v_c	f_z bei Nenn-Ø							
					4	5	6	8	10	12	16	20
P1	≤850 N/mm²	1xD	45°	270	0,015	0,019	0,023	0,030	0,045	0,054	0,072	0,090
P2	850-1200 N/mm²	1xD	45°	230	0,013	0,017	0,020	0,026	0,040	0,048	0,064	0,080
P3	850-1400 N/mm²	1xD	30°	180	0,011	0,014	0,017	0,022	0,030	0,036	0,048	0,060
M1	≤750 N/mm²	1xD	10°	120	0,009	0,012	0,014	0,018	0,030	0,036	0,048	0,060
M2	750-950 N/mm²	1xD	5°	80	0,007	0,009	0,011	0,014	0,025	0,030	0,040	0,050
K2	≥240 HB	1xD	45°	150	0,015	0,019	0,023	0,030	0,045	0,054	0,072	0,090
N1	≤7 % Si	1xD	30°	500	0,013	0,017	0,020	0,026	0,040	0,048	0,064	0,080
N2	≥7 % Si	1xD	45°	340	0,015	0,019	0,023	0,030	0,045	0,054	0,072	0,090
Ti	≤1300 N/mm²	1xD	10°	60	0,007	0,009	0,011	0,014	0,025	0,030	0,040	0,050

Bohren

Werkstoff	Härte	max. Bohrtiefe ohne Entspanen	v_c	f_z bei Nenn-Ø							
				4	5	6	8	10	12	16	20
P1	≤850 N/mm²	1,5xD	270	0,014	0,018	0,021	0,028	0,040	0,048	0,064	0,080
P2	850-1200 N/mm²	1,5xD	230	0,012	0,015	0,018	0,024	0,035	0,042	0,056	0,070
P3	850-1400 N/mm²	1,0xD	180	0,008	0,010	0,012	0,016	0,025	0,030	0,040	0,050
K2	≥240 HB	1,5xD	150	0,014	0,018	0,021	0,028	0,040	0,048	0,064	0,080
N1	≤7 % Si	1,0xD	500	0,012	0,015	0,018	0,024	0,035	0,042	0,056	0,070
N2	≥7 % Si	1,0xD	340	0,014	0,018	0,021	0,028	0,040	0,048	0,064	0,080

P1	**P** Bau- und Automatenstähle, unlegierte Vergütungs- und Einsatzstähle	1.0345 P235GH, 1.0050, 1.0503 C45, 1.2076 102Cr6
P2	**P** Automatenstähle, unlegierte Einsatzstähle, Nitrierstähle	1.1221 C60E, 1.7043 38Cr4, 1.7131 16MnCr5, 1.8550 34CrAlNi7
P3	**P** Legierte Vergütungsstähle, Werkzeug- und Schnellarbeitsstähle	1.7003 38Cr2, 1.5710 36NiCr6, 1.7225 42CrMo4, 1.2419 105WCr6
M1	**M** Rostfreier Stahl (leicht bearbeitbar/geschwefelt)	1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X10CrNiS18-9
M2	**M** Rostfreier Stahl (mittelschwer bearbeitbar)	1.4301X5CrNi18-10, 1.4571 X6CrNiTi18-10, 1.4404 X2CrNiMo17-12-2
K2	**K** Gusseisen, Grauguss, Temperguss und Kugelgraphitguss	0.6025 EN-GL250 (GG25), 0.7070 EN-GJS-700-2 (GGG70)
N1	**N** Aluminium, Alu-Knetlegierungen, Alulegierungen	3.0255 Al99,5, 3.2315 AlMgSi1, 3.1325 AlCuMg1, 3.3245 AlMg3Si
N2	**N** Aluminium-Gusslegierungen	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9
Ti	**T** Titan-Legierungen	3.7114 TiAl5Sn2,5, 3.7124 TiCu2, 3.7154 TiAl6Zr5, 3.7164 TiAl6V4

Frässtrategien

Eintauchen – spezielle Werkzeuge mit Tauchgeometrie

SuperF-UT NX

- h10 Schneidentoleranz
- 36°/37°/38° Drall
- Unter- & Glattmaßdurchmesser
- gute Bohreigenschaften
- sehr gute Fräseigenschaften

Erste Wahl: Fräsen und Tauchen

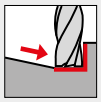
Pilotfräser Art.-Nr. 54700

- m8 Schneidentoleranz
- 30° Drall
- sehr viele Einzelabmessungen
- sehr gute Bohreigenschaften
- ausreichende Fräseigenschaften

Erste Wahl: Bohren und Pilotieren

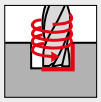
Frässtrategien

Eintauchen – spezielle Werkzeuge mit Tauchgeometrie



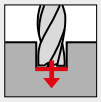
Rampen

- Rampenwinkel = 15°-45° bis max. a_p 1xD
- f_z **100 %**



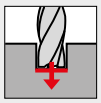
Helix

- Zustellung = 0,10-0,30xD pro Umdrehung
- kleinster zu erzeugender Durchmesser = 1,7xD
- f_z **100 %**



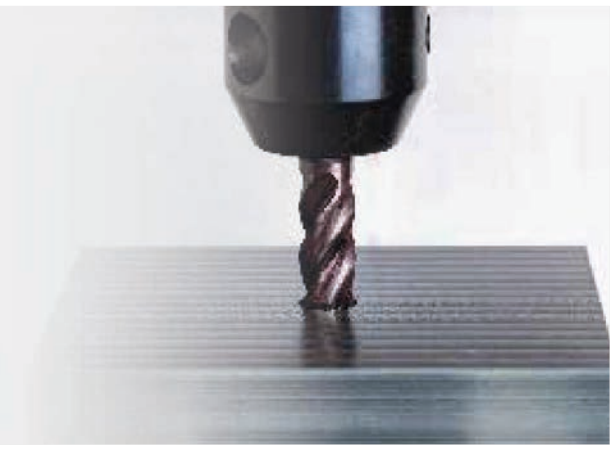
Stechen

- Alternative bei Problemen durch zu hohe Radialkräfte
- a_e 0,25xD - a_p Schneidenlänge/Freischlifflänge
- f_z **100 %**



Bohren/Pilotieren

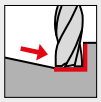
- max. Tiefenzustellung 1xD dann entspanen
- f_z **100 %**



Basis f_z = f_z Nuten

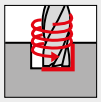
Frässtrategien

Eintauchen – allgemein mit Standard-Stirngeometrien



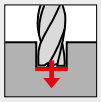
Rampen

- Rampenwinkel = 2°-5° bis max. a_p 1xD
- gleichmäßiger Lastanstieg
- f_z **75 %**



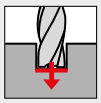
Helix

- Zustellung = 0,05 - 0,15xD pro Umdrehung
- kleinster zu erzeugender Durchmesser = 1,7xD
- f_z **100 %**



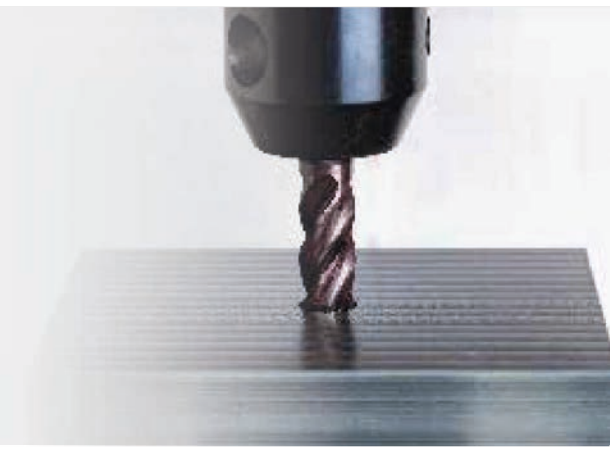
Stechen

- Alternative bei Problemen durch zu hohe Radialkräfte
- a_e 0,25xD - a_p Schneidenlänge / Freischlifflänge
- f_z **100 %**



Bohren/Pilotieren

- max. Tiefenzustellung 0,5xD dann entspanen
- f_z **50 %**



Basis f_z = f_z Nuten

Fasfräser / Vor- und Rückwärtssenker

Anfasen max. a_p / a_e 0,25xD 

Anfasen

Werkstoff	Härte	a_p max.	a_e max.	v_c	f_z bei Nenn-Ø						
					3	6	8	10	12	16	20
P	≤ 850 N/mm²	0,25xD	0,25xD	192	0,018	0,036	0,048	0,060	0,080	0,100	0,130
	≥ 850 N/mm²	0,25xD	0,25xD	140	0,016	0,032	0,042	0,060	0,070	0,090	0,120
M	≤ 750 N/mm²	0,25xD	0,25xD	120	0,013	0,025	0,034	0,050	0,050	0,070	0,090
	≥ 750 N/mm²	0,25xD	0,25xD	80	0,009	0,019	0,025	0,040	0,040	0,060	0,070
K	≤ 240 HB	0,25xD	0,25xD	170	0,017	0,033	0,044	0,060	0,070	0,090	0,120
	≥ 240 HB	0,25xD	0,25xD	150	0,014	0,028	0,037	0,050	0,060	0,080	0,100
N	≥ 7 % Si	0,25xD	0,25xD	250	0,023	0,047	0,062	0,080	0,100	0,130	0,170
H	≤ 55 HRC	0,25xD	0,25xD	50	0,010	0,020	0,026	0,040	0,050	0,060	0,070
S	Ti-Basis	0,25xD	0,25xD	50	0,010	0,020	0,027	0,036	0,043	0,060	0,070
	Ni-Basis	0,25xD	0,25xD	40	0,005	0,011	0,014	0,022	0,026	0,030	0,040

Entgraten max. a_p / a_e 0,05xD 

Entgraten

Werkstoff	Härte	a_p max.	a_e max.	v_c	f_z bei Nenn-Ø						
					3	6	8	10	12	16	20
P	≤ 850 N/mm²	0,05xD	0,05xD	250	0,030	0,060	0,080	0,110	0,130	0,170	0,210
	≥ 850 N/mm²	0,05xD	0,05xD	180	0,026	0,053	0,070	0,100	0,120	0,160	0,200
M	≤ 750 N/mm²	0,05xD	0,05xD	160	0,021	0,042	0,056	0,080	0,090	0,120	0,150
	≥ 750 N/mm²	0,05xD	0,05xD	100	0,016	0,032	0,042	0,060	0,070	0,100	0,120
K	≤ 240 HB	0,05xD	0,05xD	230	0,028	0,056	0,074	0,100	0,120	0,160	0,200
	≥ 240 HB	0,05xD	0,05xD	190	0,023	0,047	0,062	0,080	0,100	0,130	0,170
N	≥ 7 % Si	0,05xD	0,05xD	330	0,039	0,078	0,104	0,140	0,170	0,220	0,280
H	≤ 55 HRC	0,05xD	0,05xD	70	0,017	0,033	0,044	0,060	0,070	0,100	0,120
S	Ti-Basis	0,05xD	0,05xD	80	0,009	0,018	0,025	0,033	0,040	0,050	0,070
	Ni-Basis	0,05xD	0,05xD	50	0,004	0,008	0,011	0,017	0,021	0,029	0,039

Fasfräser mit radialem Hinterschliff zum Anfasen und Entgraten:

- besonders weicher Schnitt
- nachschleifbar
- in fast allen Werkstoffen einsetzbar
- hohe Standzeit durch verschleißfeste Beschichtung und ultra-zähes Hartmetall
- Schnittwerte am effektiven Durchmesser berechnen

HPC & HSC Frässtrategien

Richtwerte zur Erhöhung der Schnittwerte bei Schneidenlängen bis 3xD

HPC HSC Schruppen und TC HSC Schlichten

Werkstoff	Anwendung	radiale Zustellung in % des Ø	v_c Faktor *	f_z Faktor *	Umschlingungs-winkel
	Nuten	**100 %**	**1**	**1**	**180°**
N P K M S	HPC Schruppen	33 %	1,5	1,3	70°
	HPC Schruppen	25 %	1,6	1,5	60°
	HPC Schruppen	20 %	1,7	1,6	53°
	HPC Schruppen	15 %	1,8	1,9	46°
	HSC Schruppen	10 %	1,9	2,3	37°
	HSC Schruppen	8 %	2,0	2,5	31°
	HSC Schruppen	5 %	2,1	2,5	26°
N P K M S	HSC Schlichten	3 %	2,0	1,2	20°
	HSC Schlichten	2 %	2,0	1,1	18°
	HSC Schlichten	1 %	2,0	1,0	11°
	HSC Feinschlichten	0,5 %	2,2	0,9	8°

* Basiswerte für die Berechung mit den v_c und f_z Faktoren bitte der nachstehenden Tabelle entnehmen:

Basisschnittwerte Nuten – SuperF-UT-Werkzeuge – glattschneidig

Werkstoff	Härte	Anwendung	v_c	f_z bei Nenn-Ø									
				3	4	5	6	8	10	12	16	20	25
P1	≤ 850 N/mm²	Nuten	180	0,015	0,020	0,025	0,030	0,040	0,060	0,072	0,096	0,120	0,150
P2	850-1200 N/mm²	Nuten	160	0,014	0,019	0,024	0,029	0,038	0,055	0,066	0,088	0,110	0,138
P3	850-1400 N/mm²	Nuten	135	0,014	0,018	0,023	0,027	0,036	0,050	0,060	0,080	0,100	0,125
M1	< 750 N/mm²	Nuten	120	0,014	0,018	0,023	0,027	0,036	0,050	0,060	0,080	0,100	0,125
M2	750-850 N/mm²	Nuten	80	0,012	0,016	0,020	0,024	0,032	0,045	0,054	0,072	0,090	0,113
M3	> 850 N/mm²	Nuten	70	0,011	0,014	0,018	0,021	0,028	0,040	0,048	0,064	0,080	0,100
S-Ni	≤ 1300 N/mm²	Nuten	30	0,008	0,011	0,014	0,017	0,022	0,032	0,038	0,051	0,064	0,080
S-Ti	≤ 1300 N/mm²	Nuten	60	0,012	0,016	0,020	0,024	0,032	0,045	0,054	0,072	0,090	0,113
K1	≤ 240 HB	Nuten	160	0,017	0,022	0,028	0,033	0,044	0,065	0,078	0,104	0,130	0,163
K2	> 240 HB	Nuten	140	0,015	0,020	0,025	0,030	0,040	0,055	0,066	0,088	0,110	0,138
Alu-Knetleg.	≤ 5 % Si	Nuten	500	0,020	0,026	0,033	0,039	0,052	0,075	0,090	0,120	0,150	0,188
Alu-Gussleg.	> 5 % Si	Nuten	230	0,017	0,022	0,028	0,033	0,044	0,060	0,072	0,096	0,120	0,150
NE-Metalle	≤ 850 N/mm²	Nuten	250	0,017	0,022	0,028	0,033	0,044	0,060	0,072	0,096	0,120	0,150

Zeitspanvolumen a_p (mm) x a_e (mm) x v_f (m/min) = Q (cm^3/min)

Beispiel	HPC-Schruppen: 15 % a_e; 2xD a_p; C45
Werkzeug	SuperF-UT Typ N Ø 12 mm-4 Schneiden
Zustellung	radiale Zustellung a_e 1,8 mm = 15 % von D
Basiswert Nuten	v_c Nuten = 180 m/min, f_z Nuten = 0,072 mm
Umrechnung	v_c Faktor = 1,8 → v_c: 180 m/min x 1,8 = v_c 324 m/min f_z Faktor = 1,9 → f_z: 0,072 mm x 1,9 = f_z 0,137
Erhöhte Werte	v_c: 324 m/min / f_z: 0,137 mm n: 8594 U/min / v_f: 4710 mm/min
Zeitspanvolumen	Q = 203 cm^3/min

SuperR-HS Reibahlen

Arbeitsrichtwerte

Vorschubreihen

Werkzeug-Ø mm	Code-Buchstabe E	F	G	H	I	J
3,15	0,080	0,100	0,125	0,300	0,500	0,800
4,00	0,100	0,125	0,160	0,300	0,500	1,000
5,00	0,100	0,125	0,160	0,400	0,600	1,000
6,30	0,125	0,160	0,200	0,400	0,700	1,200
8,00	0,160	0,200	0,250	0,600	1,000	1,800
10,00	0,200	0,250	0,315	0,600	1,200	1,800
12,50	0,200	0,250	0,315	0,800	1,200	2,000
16,00	0,250	0,315	0,400	0,800	1,400	2,200
20,00	0,315	0,400	0,500	0,800	1,400	2,200
25,00	0,400	0,500	0,630	1,000	1,600	2,500
31,50	0,400	0,500	0,630	1,000	2,000	3,000
40,00	0,500	0,630	0,800	1,200	2,000	3,000
50,00	0,630	0,800	1,000	1,400	2,200	3,200

Vorschübe f (mm/U)

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Durchmesser	**Untermaße (Richtwerte)**
<6 mm	0,1-0,2 mm
<10 mm	0,2 mm
<16 mm	0,2-0,3 mm
<25 mm	0,3-0,4 mm
>25 mm	0,4 mm

Für eine optimale Kühlschmierstoffversorgung der Schneiden bei den SuperR-HS-Reibahlen Typ D für Durchgangsbohrungen empfehlen wir die Spannung im Hydrodehn- oder Schrumpffutter mit maximaler Einspanntiefe.

Kühlmitteleinsatz:

Schneidöl, hochaktiviert, grenzflächenaktives Schmiermittel mit wirksamen Stoffen (Additiven), die chemisch reagieren und dabei einen besonders haftenden und verschleißmindernden Schmierfilm erzeugen. ■

Bohrölemulsion ■

ohne Schmiermittel □

nur Luftkühlung [!]

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5,-TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
>10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu,-G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		[!]
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

SuperR-HS
VHM-Kopfreibahle

- Hochleistungsreibahle sorgt für besonders wirtschaftliche Fertigung
- flexible Aufnahmemöglichkeiten durch HA-Schaft
- einfache Verlängerung durch Schrumpfverlängerung oder Hydrodehnspannfutter
- Ausführung als universelle Variante – auch in Sonderausführungen (z.B. Guß-/Alubearbeitung) kurzfristig erhältlich

Katalog-Nr.	72874	72875
Schneidstoff	VHM	
Oberfläche	AlTiN nano	
DIN	WN	WN
Typ	HS-KS	HS-KD
Katalogseite	163	164

v_c m/min	VR-Code	
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
185	I-J	I-J
90	I-J	I-J
45	G-H	G-H
50	G-H	G-H
45	G-H	G-H
90	H-I	H-I
60	H-I	H-I
90	H-I	H-I
100	I-J	I-J
100	I-J	I-J
185	I-J	I-J
90	I-J	I-J
40	H-I	H-I
80	I-J	I-J
80	I-J	I-J
80	I-J	I-J
80	I-J	I-J
50	G-H	G-H
60	H-I	H-I
60	H-I	H-I
120	I-J	I-J
175	I-J	I-J
175	I-J	I-J
175	I-J	I-J
140	I-J	I-J
140	I-J	I-J
80	E	E
80	E	E

Ausführung für Durchgangsbohrung
mit radialer
Kühlmittelzufuhr

Ausführung für Grundbohrung
mit zentralem
Kühlmittelaustritt

Kegelsenker V-NX
Arbeitsrichtwerte

Vorschubreihen

Werkzeug-Ø mm	Code-Buchstabe E	F	G	H	I	J
2,00	0,03	0,04	0,06	0,08	0,10	0,13
2,50	0,03	0,05	0,07	0,10	0,13	0,16
3,15	0,03	0,05	0,08	0,11	0,15	0,20
4,00	0,04	0,06	0,09	0,13	0,17	0,22
5,00	0,04	0,07	0,10	0,14	0,18	0,23
6,30	0,04	0,07	0,12	0,15	0,19	0,24
8,00	0,05	0,08	0,13	0,16	0,20	0,25
10,00	0,06	0,09	0,14	0,17	0,22	0,26
12,50	0,06	0,10	0,15	0,19	0,23	0,28
16,00	0,07	0,11	0,17	0,21	0,26	0,31
20,00	0,08	0,13	0,18	0,23	0,28	0,33
25,00	0,09	0,15	0,21	0,26	0,30	0,38
31,50	0,12	0,17	0,24	0,30	0,36	0,42
40,00	0,14	0,21	0,28	0,34	0,40	0,46

Vorschübe f (mm/U)

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Kühlmitteleinsatz::

Schneidöl, hochaktiviert, grenzflächenaktives Schmiermittel mit wirksamen Stoffen (Additiven), die chemisch reagieren und dabei einen besonders haftenden und verschleißmindernden Schmierfilm erzeugen. ■

Bohrölemulsion ■

ohne Schmiermittel □

nur Luftkühlung ⊡

Werkstoffgruppe	Werkstoffbeispiele, **neue Bezeichnung** (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN	Zugfestigkeit MPa (N/mm²)	Härte	Kühlmittel
Allgemeine Baustähle	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)	≤500		■
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	>500-850		■
Automatenstähle	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		■
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	850-1000		■
Unlegierte Vergütungsstähle	**1.0402** C22, **1.1178** C30E (Ck30)	≤ 700		■
	1.0503 C45, **1.1191** C45E (Ck45)	700-850		■
	1.0601 C60, **1.1221** C60E (Ck60)	850-1000		■
Legierte Vergütungsstähle	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	850-≤1000		■
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	1000-1200		■
Unlegierte Einsatzstähle	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Legierte Einsatzstähle	**1.7043** 38Cr4	850-≤1000		■ ■
	1.5752 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	1000-1200		■ ■
Nitrierstähle	**1.8504** 34CrAl6	≥850-≤1000		■
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	>1000-1200		■ ■
Werkzeugstähle	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		■
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	>850-1000		■ ■
Schnellarbeitsstähle	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Federstähle	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Gehärtete Stähle	–		≤40-48 HRC	■
			>48-60 HRC	■
Rostfreie Stähle, geschwefelt	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤850		■
austenitisch	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitisch	**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850		■
Gusseisen	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)	850-≤1000		■ □
	0.6025 EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	1000-1200		■ □
Kugelgraphit- und Temperguss	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)		≤240 HB	■
	0.7070 EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		<300 HB	■
Hartguss	–		≤350 HB	■
Neue Gusswerkstoffe GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)			■ □
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo6			■ □
Neue Gusswerkstoffe ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	800-1000		■ □
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	1200-1400		■ □
Sonderlegierungen	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Titan und Titan-Legierungen	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		■
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium und Al-Legierungen	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al-Knetlegierungen	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al-Gusslegierungen ≤ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		■
> 10 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium-Legierungen	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		⊡
Kupfer, niedriglegiert	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Messing, kurzspanend	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		■ ■
langspanend	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		■ ■
Bronzen, kurzspanend	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		■ ■
	2.0790 CuNi18Zn19Pb	>600-850		■
Bronzen, langspanend	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		■
	2.0980 CuAl11Ni, **2.1247** CuBe2	>850-1000		■
Kunststoffe, duroplastisch	Epoxidharz, Resopal, Pertinax, Moltopren		–	□
thermoplastisch	Plexiglas, Hostalen, Novodur, Makralon		–	■ □
Kunststoffe, aramidfaserverstärkt	Kevlar		–	□
glas-/kohlefaserverstärkt	GFK/CFK		–	□

Katalog-Nr.	52348	52350	52398	52399
Schneidstoff	HSS-Co	HSS-Co	HSS-Co	HSS-Co
Oberfläche	AlTiN	AlTiN	AlTiN	AlTiN
DIN	335	335	335	335
Kegelwinkel	90°	90°	90°	90°
Schaftform	zylindrisch	3-Flächen	zylindrisch	3-Flächen
Katalogseite	166	167	168	169

v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code	v_c m/min	VR-Code
41	G	41	G	41	G	41	G
39	F	39	F	39	F	39	F
41	G	41	G	41	G	41	G
39	F	39	F	39	F	39	F
41	G	41	G	41	G	41	G
39	G	39	G	39	G	39	G
25	F	25	F	25	F	25	F
19	G	19	G	19	G	19	G
15	F	15	F	15	F	15	F
32	G	32	G	32	G	32	G
19	G	19	G	19	G	19	G
13	F	13	F	13	F	13	F
19	F	19	F	19	F	19	F
15	E	15	E	15	E	15	E
22	F	22	F	22	F	22	F
19	E	19	E	19	E	19	E
19	E	19	E	19	E	19	E
13	E	13	E	13	E	13	E
20	F	20	F	20	F	20	F
15	E	15	E	15	E	15	E
18	E	18	E	18	E	18	E
32	G	32	G	32	G	32	G
20	G	20	G	20	G	20	G
28	G	28	G	28	G	28	G
25	G	25	G	25	G	25	G
10	E	10	E	10	E	10	E
28	G	28	G	28	G	28	G
18	G	18	G	18	G	18	G
10	E	10	E	10	E	10	E
19	F	19	F	19	F	19	F
13	E	13	E	13	E	13	E
101	H	114	H	101	H	114	H
89	H	89	H	89	H	89	H
51	G	51	G	51	G	51	G
39	G	39	G	39	G	39	G
127	H	127	H	127	H	127	H
76	H	76	H	76	H	76	H
101	H	101	H	101	H	101	H
64	H	64	H	64	H	64	H
39	H	39	H	39	H	39	H
33	H	33	H	33	H	33	H
31	H	31	H	31	H	31	H
25	H	25	H	25	H	25	H
39	H	39	H	39	H	39	H
51	H	51	H	51	H	51	H

Katalog-Nr.	Seite	Norm	Oberfläche	Bezeichnung	Schneidstoff	Typ
51146	51	DIN 6537K	AlTiN	Spiralbohrer mit verst. Zylinderschaft	VHM	H
51290	50	Werksnorm	TiAlN nano	Spiralbohrer kurz	VHM	N
51670	24	DIN 6537K	AlTiN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-VA
51673	16	DIN 6537K	TiAlN nano	SuperV-Bohrer ohne Innenkühlung	VHM	SuperV-U
51674	34	DIN 6537L	AlTiN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-VA
51676	22	DIN 6537K	TiAlN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-IK-U
51681	32	DIN 6537L	TiAlN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-IK-U
51687	20	DIN 6537L	TiAlN nano	SuperV-Bohrer ohne Innenkühlung	VHM	SuperV-U
51750	18	DIN 6537K	TiAlSiN	SuperV-Bohrer ohne Innenkühlung	VHM	SuperV-S
51752	26	DIN 6537K	TiAlSiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-S
51753	28	DIN 6537K	TiAlSiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-S
51754	38	DIN 6537L	TiAlSiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-S
51755	40	DIN 6537L	TiAlSiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-S
51756	44	Werksnorm	TiAlSiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-S
51764	45	Werksnorm	AlTiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-T
51765	46	Werksnorm	AlTiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-T
51766	47	Werksnorm	AlTiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-T
51767	48	Werksnorm	AlTiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-T
51768	49	Werksnorm	AlTiN	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-T
51786	36	DIN 6537L	TiAlN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-X
51791	42	Werksnorm	TiAlN nano	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-X
52348	166	DIN 335	AlTiN	Kegelsenker 90°, spiralisiert	HSS-Co	V-NX
52350	167	DIN 335	AlTiN	Kegelsenker 90°, spiralisiert	HSS-Co	V-NX
52398	168	DIN 335	AlTiN	Kegelsenkersätze 90°, spiralisiert	HSS-Co	V-NX
52399	169	DIN 335	AlTiN	Kegelsenkersätze 90°, spiralisiert	HSS-Co	V-NX
53399	162	Werksnorm	TiAlZrN	Entgratfräser 90°	VHM	SuperAF-90
53610	114	~DIN 371/376	TiCN	Kühlkanal-Gewindeformer für Metr. ISO-Gewinde	HSS-E-PM	Durativ N-X
53612	116	~DIN 374	TiCN	Kühlkanal-Gewindeformer für Metr. ISO-Feingewinde	HSS-E-PM	Durativ N-X
53618	115	~DIN 371/376	TiCN	Kühlkanal-Gewindeformer für Metr. ISO-Gewinde	HSS-E-PM	Durativ N-X
53619	117	~DIN 374	TiCN	Kühlkanal-Gewindeformer für Metr. ISO-Feingewinde	HSS-E-PM	Durativ N-X
53630	108	~DIN 371/376	TiCN	Gewindeformer für Metrische ISO-Gewinde	HSS-E-PM	Durativ N-X
53631	109	~DIN 371/376	TiCN	Gewindeformer für Metrische ISO-Gewinde	HSS-E-PM	Durativ N-X
53632	110	~DIN 374	TiCN	Gewindeformer für Metrische ISO-Feingewinde	HSS-E-PM	Durativ N-X
53633	111	~DIN 371/376	TiCN	Gewindeformer für UNC-Gewinde	HSS-E-PM	Durativ N-X
53634	112	~DIN 371/374	TiCN	Gewindeformer für UNF-Gewinde	HSS-E-PM	Durativ N-X
53635	113	DIN 2189	TiCN	Gewindeformer für Whitworth-Rohrgewinde	HSS-E-PM	Durativ N-X
53640	87	DIN 371/376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Produktiv H
53642	86	DIN 371/376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv H
53646	84	DIN 376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	H
53647	85	~DIN 376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	H
53661	90	DIN 371/376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv H
53664	91	DIN 371/376	TiAlN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Intensiv H
53676	92	DIN 371/376	TiCN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	H
53733	68	~DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N-X
53734	69	DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N-X LH
53735	70	DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Produktiv N-X
53736	71	DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Produktiv N-X
53737	72	DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N-X
53738	73	DIN 371/376	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N-X
53739	74	Werksnorm	AlTiZrN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N-X
53746	75	~DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X
53747	76	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X LH
53748	77	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Intensiv N-X
53749	78	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E-PM	Intensiv N-X
53750	80	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X
53751	81	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X
53752	82	Werksnorm	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X
53760	79	DIN 371/376	TiAlN-H	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv N-X
53770	100	DIN 374	TiAlN-H	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Intensiv N-X
53775	107	DIN 5156	TiAlN-H	Gewindebohrer für Whitworth-Rohrgewinde	HSS-E	Intensiv N-X
53778	93	DIN 374	AlTiZrN	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Produktiv N-X
53779	96	DIN 374	AlTiZrN	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Produktiv N-X
53780	97	DIN 374	TiAlN-H	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Intensiv N-X
53781	101	DIN 374	TiAlN-H	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Intensiv N-X
53782	103	DIN 371/376	AlTiZrN	Gewindebohrer für UNC-Gewinde	HSS-E	Produktiv N-X
53783	104	DIN 371/376	TiAlN-H	Gewindebohrer für UNC-Gewinde	HSS-E	Intensiv N-X
53784	105	~DIN 371/374	AlTiZrN	Gewindebohrer für UNF-Gewinde	HSS-E	Produktiv N-X
53785	106	~DIN 371/374	TiAlN-H	Gewindebohrer für UNF-Gewinde	HSS-E	Intensiv N-X
53789	94	DIN 374	AlTiZrN	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E-PM	Produktiv N-X
53790	95	DIN 374	AlTiZrN	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E-PM	Produktiv N-X
53791	98	DIN 374	TiAlN-H	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E-PM	Intensiv N-X
53792	99	DIN 374	TiAlN-H	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E-PM	Intensiv N-X

Katalog-Nr.	Seite	Norm	Oberfläche	Bezeichnung	Schneidstoff	Typ
53831	124	Werksnorm	TiCN	Gewindefräser ohne Senkfase für Whitworth-Rohrgewinde	VHM	TM SP
53832	125	Werksnorm	TiCN	Mehrbereichs-Gewindefräser für Whitworth-Rohrgewinde	VHM	TMU SP
53840	127	Werksnorm	TiCN	Mikro-Gewindefräser für Metrische ISO-Gewinde	VHM	TM SP
53841	129	Werksnorm	TiCN	Mikro-Gewindefräser für Whitworth-Rohrgewinde	VHM	TM SP
53850	128	Werksnorm	TiAlN	Mikro-Gewindefräser für Metrische ISO-Gewinde	VHM	TM SP
53860	122	Werksnorm	TiCN	Gewindefräser ohne Senkfase für Metr. ISO-Gewinde	VHM	TM SP
53890	121	Werksnorm	AlCrN	Gewindefräser mit Senkfase für Metrische ISO-Gewinde	VHM	TMC-NX SP
53892	126	Werksnorm	TiCN	Mikro-Gewindefräser für Metrische ISO-Gewinde	VHM	MTM-NX SP
53948	118	Werksnorm	TiSiN	Bohrgewindefräser für Metrische ISO-Gewinde	VHM	TMD-NX
53949	119	Werksnorm	TiSiN	Bohrgewindefräser für UNC-/UNF-Gewinde	VHM	TMD-NX
53950	120	Werksnorm	TiSiN	Bohrgewindefräser für Rohrgewinde	VHM	TMD-NX
54302	161	Werksnorm	TiAlSiN	Kopierfräser mit Torusanschliff	VHM	NH
54304	159	Werksnorm	TiAlSiN	Kopierfräser mit Torusanschliff	VHM	H
54305	160	Werksnorm	TiAlSiN	Kopierfräser mit Torusanschliff	VHM	H
54542	151	DIN 6527L	TiAlSiN	SuperF-UT-Fräser VA-r	VHM	SuperF-UT VA-r
54550	148	DIN 6527L	AlCrN	SuperF-UT-Fräser N-r	VHM	SuperF-UT N-r
54553	147	Werksnorm	TiAlN	SuperF-UT-Fräser NL	VHM	SuperF-UT NL
54555	132	Werksnorm	AlTiN+	SuperF-UT-Fräser ZS-r	VHM	SuperF-UT ZS-r
54556	145	DIN 6527L	AlTiN nano	SuperF-UT-Fräser S	VHM	SuperF-UT S
54560	143	DIN 6527L	ZrN	SuperF-UT-Fräser Ti	VHM	SuperF-UT Ti
54561	144	DIN 6527L	ZrN	SuperF-UT-Fräser Ti	VHM	SuperF-UT Ti
54577	130	Werksnorm	AlTiN+	SuperF-UT-Fräser Z	VHM	SuperF-UT Z
54578	131	Werksnorm	AlTiN+	SuperF-UT-Fräser ZS	VHM	SuperF-UT ZS
54581	133	Werksnorm	AlTiN+	SuperF-UT-Fräser ZS-7	VHM	SuperF-UT ZS-7
54583	134	Werksnorm	TiAlN	SuperF-UT-Fräser N-5	VHM	SuperF-UT N-5
54584	135	Werksnorm	TiAlN	SuperF-UT-Fräser N-5	VHM	SuperF-UT N-5
54585	140	DIN 6527L	TiAlSiN	SuperF-UT-Fräser NX-IK	VHM	SuperF-UT NX-IK
54586	137	Werksnorm	TiAlSiN	SuperF-UT-Fräser NX-3	VHM	SuperF-UT NX-3
54587	138	Werksnorm	TiAlSiN	SuperF-UT-Fräser NX-3	VHM	SuperF-UT NX-3
54589	139	DIN 6527K	TiAlSiN	SuperF-UT-Fräser NX	VHM	SuperF-UT NX
54592	156	Werksnorm	DLC	SuperF-UT-Fräser Al-X	VHM	SuperF-UT Al-X
54594	141	Werksnorm	TiSiN	SuperF-UT-Fräser NX Micro	VHM	SuperF-UT NX Micro
54595	142	Werksnorm	TiSiN	SuperF-UT-Fräser NX Micro	VHM	SuperF-UT NX Micro
61131	56	DIN 1897	AlTiZrN	Spiralbohrer extra kurz	HSS-Co	V18
61232	58	DIN 338	AlTiZrN	Spiralbohrer kurz	HSS-Co	V18
63033	83	DIN 371/ 376	TiN	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Produktiv N
64552	146	DIN 6527L	TiAlZrN	SuperF-UT-Fräser N^2	VHM	SuperF-UT N^2
64553	150	DIN 6527L	TiAlZrN	SuperF-UT-Fräser VA-X^2	VHM	SuperF-UT VA-X^2
64560	136	Werksnorm	TiAlZrN	SuperF-UT-Fräser FS^2	VHM	SuperF-UT FS^2
65030	52	Werksnorm	TiN	Einlippenbohrer SuperT-NXL	HM	SuperT-NXL
65031	53	Werksnorm	TiN	Einlippenbohrer SuperT-NXL	HM	SuperT-NXL
65032	54	Werksnorm	TiN	Einlippenbohrer SuperT-NXL	HM	SuperT-NXL
65033	55	Werksnorm	TiN	Einlippenbohrer SuperT-NXL	HM	SuperT-NXL
71018	60	DIN 338	Bronze-VAP	V16-Spiralbohrer	M42	V16
71019	62	DIN 338	Bronze-VAP	V16-Spiralbohrer-Sätze	M42	V16
71020	63	Werksnorm		V16-Pocket-Satz (Spiralbohrer, Gewindebohrer und Senker)		N
71140	64	NAS 907	blank	Stangenbohrer, Länge 6 inches	HSS	N
71141	66	NAS 907	blank	Stangenbohrer, Länge 12 inches	HSS	N
71142	65	NAS 907	nitriert	Stangenbohrer, Länge 6 inches	HSS	N
71143	67	NAS 907	nitriert	Stangenbohrer, Länge 12 inches	HSS	N
71791	30	DIN 6537L	blank	SuperV-Bohrer mit Innenkühlung	VHM	SuperV-Al
72874	163	Werksnorm	AlTiN nano	VHM-Hochleistungs-Reibahlen	VHM	SuperR-HS-KS
72875	164	Werksnorm	AlTiN nano	VHM-Hochleistungs-Reibahlen	VHM	SuperR-HS-KD
73647	102	DIN 374	nitriert	Gewindebohrer für Metrische ISO-Feingewinde	HSS-E	Intensiv H
73661	88	DIN 371	nitriert	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv H
73664	89	DIN 376	nitriert	Gewindebohrer für Metrische ISO-Gewinde	HSS-E	Intensiv H
73830	123	Werksnorm	TiCN	Gewindefräser ohne Senkfase für Metr. ISO-Gewinde	VHM	TMU SP
74556	153	Werksnorm	blank	SuperF-UT-Fräser Al-L	VHM	SuperF-UT Al-L
74558	154	Werksnorm	blank	SuperF-UT-Fräser Al-XL	VHM	SuperF-UT Al-XL
74562	155	Werksnorm	blank	SuperF-UT-Fräser Al-r	VHM	SuperF-UT Al-r
78719	165	Werksnorm	blank	Schrumpfverlängerungen		
78882	157	Werksnorm	AlTiN+	SuperF-UT-Fräser Z, Sätze	VHM	SuperF-UT Z
78883	158	DIN 6527L	TiAlZrN	SuperF-UT-Fräser N^2, Sätze	VHM	SuperF-UT N^2

STOCK

Tel. +49 30 40903-33 300 | info@stock.de
Lengeder Str. 29-35 | 13407 Berlin | Deutschland
www.stock.de

148 675/21021-VIII-20 · Printed in Germany · 2021